Alta. Dept. of Lands and Forests — Fish and Wildlife Division

I Alta. Dept. of Agriculture — Plant Industry Division

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Problem Wildlife Management in Alberta.
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PROBLEM WILDLIFE MANAGEMENT

Alberta
LANDS AND FORESTS
AGRICULTURE

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LANDS AND FORESTS

MEMORANDUM

FROM Dr. A. O. Olson and
G. R. Kerr

OUR FILE REFERENCE

YOUR FILE REFERENCE

Edmonton, Alberta
DATE May 15, 1974

TO All Operating Staff -
Department of Agriculture,
Department of Lands & Forests,
and others concerned.

TELEPHONE

SUBJECT PROBLEM WILDLIFE MANAGEMENT IN ALBERTA

The attached Joint Program of Alberta Agriculture and Lands & Forests has been approved by both Ministers and Deputies as a policy document, and is provided for the guidance of operating staff in both Departments.

An attempt has been made to present a realistic outline of the historic background, conflicts of philosophy and interest, problems and possible solutions through joint action. Areas of responsibility and authority have been outlined where these are clear-cut. However in many instances there are joint or overlapping interests and responsibilities, and here success will depend on the cooperative support of all field and administrative staff.

The agreement spells out in detail the methods of management and control for individual species in the Appendices. These have been developed by the staff of both departments with the advice of the Problem Wildlife Committee. They will be periodically reviewed and amended if necessary with additional and/or replacement pages of the Appendices forwarded to you in the future. Please refer any questions concerning this brief and Appendices to the Problem Wildlife Committee - Attention: B. Gilbert, Alberta Agriculture, O.S. Longman Bldg., Edmonton.

We solicit your support for the optimum use of staff, facilities, expertise and resources in the management of problem wildlife, in the interests both of the public and wildlife.

Dr. A. O. Olson, Director
Plant Industry Division

Gordon R. Kerr

G. R. Kerr, Director
Fish and Wildlife Division

att'd.

PROBLEM WILDLIFE COMMITTEE

TERMS OF REFERENCE

The Problem Wildlife Committee is an action or operational committee established:

1. To consider current problems in vertebrate wildlife management, provide a team approach to planning, and take whatever action is necessary. It is not the intent of the committee to limit or interfere with ongoing programs.

2. To review the management of vertebrate problem wildlife in the province on a regular basis with the object of:

   a) Assessing the adequacy of the various provincial programs affecting vertebrate animals, identifying immediate and future needs, demands, conflicts of interests and developing proposals to meet them.

   b) Advising on desirable allocations of effort among the departments and agencies concerned to achieve efficient use of available facilities, expertise, personnel, and funds, e.g. the joint program on rabies vector control, bear damage in bee yards.

   c) Facilitating interagency sharing of information and co-ordination of programs at all management and operational levels.

   d) Providing information to the general public and special interest groups on the management of wildlife.

3. To provide a public forum for the reception of recommendations and exchange of views on policies and programs from groups representing diverse viewpoints including private organizations, special interests and government representatives.

4. To form working parties or subcommittees as required for the study of special aspects of the problem.

5. To meet at least once a year and to report with recommendations to the provincial Ministers of Agriculture and Lands and Forests.

PROBLEM WILDLIFE COMMITTEE

General Statement

A joint agreement on problem wildlife management in Alberta has been ratified by the Ministers of Agriculture and Lands and Forests. In order to carry out the goals of that agreement, a Problem Wildlife Committee has been established for the overall planning and implementation of operations. The value of this committee is considerably enhanced through its ability to act without further authorization but still taking cognizance of varied interests in wildlife.

This agreement does not bind either department while acting under present policy and authority. It is understood, however, that parties to the agreement have an obligation to report back to the Committee. In this way the objective to review all aspects of problem wildlife management including policy, damage control programs, conservation, research and legislation can be implemented.

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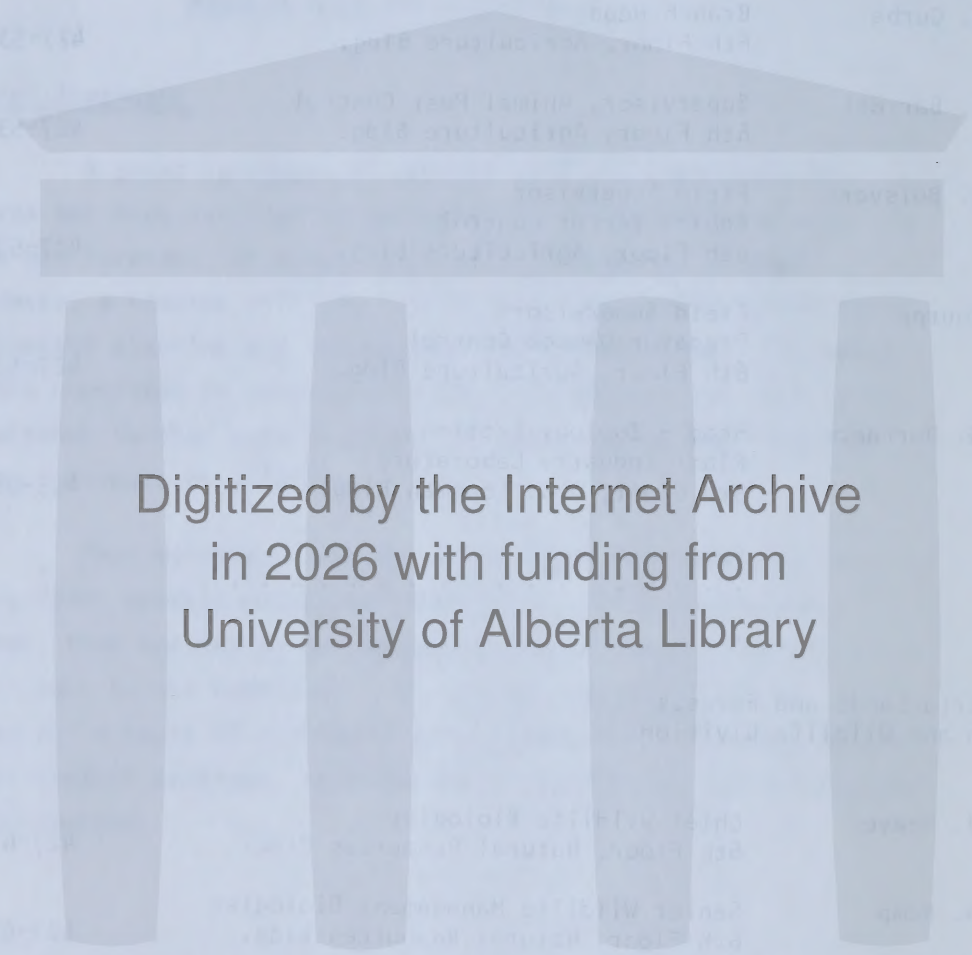

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PROBLEM WILDLIFE MANAGEMENT IN ALBERTA

Joint Program of Alberta Agriculture and Lands & Forests

by

J.B. Gurba, Department of Agriculture

D.J. Neave, Department of Lands & Forests

August, 1973

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I. BACKGROUND

Prior to the settlement of Western Canada, native Indians and Eskimos used wildlife as basic sources of food and clothing. Fur traders were the first immigrants followed by farmer settlers. Both groups used wildlife in ways similar to the natives. Farmers and other settlers soon found that certain wildlife interfered with food production, or posed a threat to persons and property. Control action was taken through shooting, trapping, snaring and poisoning, without much government restriction.

As human settlement and development increased, government action was taken to protect fur bearers and other wildlife. Provincial governments retained jurisdiction over natural resources including wildlife. In Alberta the control of fish, game and fur bearers was administered by the Department of Agriculture until about 1941. At that time, the Fish and Game Branch was transferred to the Department of Lands and Forests. The Fur Farms Section remained in Agriculture. Control of predatory animals such as coyotes, wolves, cougars, magpies and crows was handled by Lands and Forests.

Various control mechanisms for problem wildlife were used, including bounties, professional trappers and contract hunters. In 1951, due to pressure from livestock producers, particularly sheepmen, the responsibility for coyote control in the agricultural (settled) area was transferred to Agriculture, with Lands and Forests retaining control of coyotes in the forest (green) area. The control of wolves, cougars, bears and other predators has remained the responsibility of Lands and Forests.

In 1958, responsibility for magpie control was split between Lands and Forests and Agriculture on the same basis as for coyotes, to discontinue the long-time, but generally ineffective, crow and magpie bounty. The control of field rodents, such as Richardson's (prairie gopher), Columbian and Franklin ground squirrels, pocket gophers, Norway rats, various mice and voles, mainly of concern to agriculture and horticulture, has remained the responsibility of Agriculture. Beaver control has remained the responsibility of Lands and Forests. The control of skunks and other rabies wildlife vectors was set up under a joint program in December, 1970.

II. PHILOSOPHY AND POLICY OF PROBLEM WILDLIFE MANAGEMENT

The policy and programs of management of problem wildlife have evolved over the years via tradition and through changing philosophy and rationale:

Department of Lands & Forests, Fish & Wildlife Division

While the Fish and Wildlife Division is not involved in a general predator control program for the protection of wildlife populations, the Division has the responsibility for control of predatory animals in the green area of the Province and problem wildlife management in the settled areas with the exception of certain species such as coyotes, magpies and rodents which are usually considered agricultural pests. The Division recognizes that some wildlife populations such as ducks and individuals of many species of wildlife, particularly carnivores and fur bearers, can create considerable damage to man's interests. The recognition of these problems can be seen from the following:

The overall purpose of the Wildlife Branch is to maintain and improve wildlife populations and wildlife habitat to perpetuate all forms of wildlife for the aesthetic, recreational and economic well-being of the people of Alberta.

The result is a program to remove problem wildlife animals, ungulates, fur bearers, carnivores and birds when they are damaging crops or livestock, highways or human health. The removal of animals can either be by directly killing them, often through longer seasons and/or bag limits in chronic problem areas, or live-trapping them for release in unsettled areas. Control programs are often balanced with prevention measures, where animals are excluded from areas by fences, decoy baits or repellents, and in some instances also balanced with compensation programs.

Generally predator control for the prevention of damage to other wildlife or other habitats is not an integral part of modern wildlife management. In fact the opposite: the maintenance of a healthy predator population to prevent high wildlife population densities is an integral part of wildlife management. Control for preservation of wildlife would only be recommended if it was shown that food supplies were underutilized, reproduction was high and predators were suppressing game numbers in a large area. Statements (3) and (6) of Policy (pages 4,5) should be emphasized as the implications of a cost-benefit analysis would include commercial and recreational aspects of wildlife.

Department of Agriculture, Crop Protection & Pest Control Branch

The stated Purpose of the Branch is *"To provide a service in protecting crops and domestic animals from insect and animal pests, and plant diseases, and to provide for the proper management of agricultural chemicals."*

The Branch is divided into four specialized sections: Plant Industry Laboratory Services, Entomology, Plant Pathology and Animal Pests each headed by a supervisor. The latter section is responsible for management of problem wildlife (vertebrate pests) with the scientific and research support of the developing zoology section,Plant Industry Laboratory.

Basically the Objectives are: 1) To help people to help themselves in resolving problems by providing information, enabling legislation and the necessary resources 2) To provide the mechanism (system) through cooperative programs with municipalities and residents whereby realistic management of vertebrate pests is made practical and possible, with assistance as necessary.

The control of vertebrate pests is carried out through cooperative programs with municipalities, as with most pest programs. The Branch develops methods for prevention and control of pest damage, arranges for or supplies control materials, provides training for government and municipal personnel and landowners in the use of methods and techniques, and provides general supervision. Municipalities appoint pest control officers who are responsible for training, supplying control materials, and providing supervision of and assistance to landowners within the municipality. Each resident is expected to look after his own problem with assistance provided where and when deemed necessary.

The programs are flexible to allow for the management of different pest species and changing conditions between farms and across the province. Thus for Norway rats a total extermination program is operated with the cooperative action of each resident expected and enforced if necessary. For field rodents such as gophers, ground squirrels and mice, practical control methods are developed and information is supplied through printed publications.

District Agriculturists and other extension specialists provide information through printed publications, news media, public meetings and direct contact. Municipal officers supply information and various control methods and materials e.g. rat bait, pocket gopher burrow-builder machines, magpie traps, coyote control devices, etc. to assist landowners with individual problems. With the exception of N. rats where total species control or exclusion is practiced, the general objective is reduction or economic control of pest damage rather than control of the species per se.

Coyote control is left to the decision of the land or livestock owner. Grain farmers generally prefer to preserve the coyote for assistance in rodent control. Cattlemen will usually control coyotes only if losses occur whereas sheepmen generally carry out year-round coyote control since damage is considered a constant threat. The Department of Agriculture attempts to keep coyote control flexible enough to accommodate the wide-ranging interests within the agriculture industry. The program is directed at coyote damage control through the selective removal of offending animals. This program has over 23 years had little effect on the over-all coyote population.

However it should be recognized that selective control using non-lethal humane methods is much easier in theory than in practise. Considerable research and field development is necessary to implement an effective, practical system. The employment of predator specialists, on a one year trial basis, to assist with special problem cases, is a step toward the objective of reducing or controlling coyote damage by the use of the most effective methods for removing offending animals.

In May, 1972 the Department adopted the policy statement prepared by the Wildlife Society and by the addition of a seventh point, officially announced a Policy Statement on Vertebrate Pest Control:

"In the management of vertebrate wildlife pests and the control of damage by nuisance animals, basically we:

1. Recognize that wild animals have both negative and positive social and economic values and certain species may damage human interests, other wildlife, or other habitats, necessitating prevention or control of such damage as an integral part of wildlife management.
2. Encourage the use of techniques known to be of value in counteracting damage situations including:
   - i) exclusion or mechanical protection
   - ii) use of repellent chemicals or devices
   - iii) environmental or biological control of offending populations
   - iv) reduction of the number of offending individuals or local populations through transfer or lethal control.
3. Encourage that lethal control, where employed, be related to social and economical benefits and that the minimum necessary be used in order to bring damage within tolerable limits.

4. Encourage control methods as efficient, safe, economical, humane, and as selective as possible.
5. Encourage and support in principle continuing research in animal ecology and in methods of damage prevention and control in order to determine when and how much control is necessary and to develop optimum methods for its accomplishment.
6. Encourage that animal control programs be thoroughly planned, justified, carried out, and evaluated on the basis of total social benefits.
7. Wherever possible and practical, encourage that all necessary wildlife control programs be coupled with scientific utilization programs in order to enhance beneficial returns from control programs and promote better utilization of our wildlife resources."

With the gradual change in public philosophy to predator management and the banning or severe restriction of predacides in the United States, there is a need for a clear statement of governmental policy on problem wildlife management in Alberta. While we do not have a Canadian study on control of nuisance wildlife such as the U.S. Cain Report, we can use the U.S. experience, expertise and recommendations, without experiencing their mistakes. The joint responsibilities and interests of the Departments of Lands and Forests, and Agriculture have resulted in the need for a joint statement. This statement, outlining responsibilities and activities, will provide a better service to all public concerns and will allow cooperative work, where required, between the two Departments and with the Municipalities. This statement will not create a Predator Control Authority of any type but should lead to the re-establishment of an advisory and liaison Problem Wildlife Committee (formerly known as the Predator, Wildlife and Conservation Committee).

II. CURRENT RELATIVE LEGISLATION

The following federal and provincial legislation has a bearing on control of vertebrate pests and the use of animal toxicants:

a) Federal Acts

1. Pest Control Products Act - registration, classification for use, evaluation and sale of pest control products, etc.

2. Food and Drugs Act - regulation of contamination in food, etc.

3. Feeds Act - regulation of contamination in feeds, etc.

4. Migratory Birds Convention Act - prohibits harm to migratory birds, etc.

5. Fisheries Act - prohibits harm to fish and the use of substances that might contaminate waters inhabited by fish, etc.

6. Hazardous Substances Act - regulation of sale and use of hazardous materials, etc.

7. Criminal Code - deals with cruelty to animals, etc.

b) Provincial Acts

1. Agricultural Pests Act - provides for the control of five declared agricultural pests including the Norway rat and coyote, etc. A revision is underway.

2. Setting of Poison Act - regulation of the use of poison to control gophers, coyotes and wolves, and two named predators, magpie and skunk, etc. A complete revision is necessary.

3. Alberta Pharmaceutical Association Act - regulates the sale of poisons, etc.

4. Public Health Act - regulates matters necessary for public health, etc.

5. Wildlife Act - provides for the protection of wildlife, allows hunting of game birds and animals, taking of fur bearers and fur bearing carnivores, etc. Definition of wildlife, General Game Regulations, Game Hunting Regulations, Wildlife Damage Fund Regulations. On most private land, landowners can protect their property throughout the year from most problem wildlife.

6. Agricultural Chemicals Act (Dept. of Environment) - controls use and application of all agricultural chemicals including animal poisons, requires permits for more hazardous compounds but exempts poisons used under the Agricultural Pests Act and the Setting of Poison Act, etc.

7. Municipal Government Act - permits enactment of bylaws to control pests and nuisances, etc.

IV. CURRENT MANAGEMENT OF PROBLEM WILDLIFE

The three types of action which have been employed by the Department of Agriculture and the Department of Lands and Forests to reduce, alleviate or solve conflicts involving animals and other interests are:

1) Compensation. With the introduction of a Wildlife Certificate ($3.00 levy on each hunting license) and creation of the Wildlife Damage Fund in 1964, compensation to a maximum of $25.00 per acre has been paid to farmers suffering losses to standing or swathed crops of cereal grains. The cost of compensation almost exclusively due to ducks has varied from $28,000 to $950,000 per year, averaging at $350,000 in the eight years. This cost is paying only 1/3 of the value of the crop and with less than a third of the damage being reported. Damage is estimated in excess of 3 million dollars per year.
2) Management of species populations by commercial trapping and recreational hunting season adjustments. Season dates and possibly bag limits can alleviate damage problems. Late season elk hunts, for example, have effectively eliminated elk depredation on hay stacks.
3) Control - There are four methods of control, used singly or in combination:
    a) Damage reduction by removing individual animals involved in a damage problem.
    b) Preventive techniques in scaring or repelling animals from a potential damage area.
    c) Exclusion by use of fencing or other barriers (or keeping potential pests out of Alberta as with Norway rats).
    d) Lure crops or other environmental manipulation to keep animals out of potential damage areas.

Direct lethal control action is taken only after some verification of damage and is directed against the offending individual(s). Where a hide has a monetary value, resident or registered trappers are employed. Control action includes activities aimed at beaver along roads, wolves attacking livestock and coyotes attacking sheep. The rat control program along the Saskatchewan border and the joint rabies vector control program involving the skunk buffer zone along the east border and radial depopulation for positive cases, have both been highly successful.

Preventive control actions are the most successful in the long-term. However considerable research is required for practical, economic methods.

Lure crops or bait stations in areas of high and chronic duck damage, will reduce damage to cereal crops. Similarly electric fencing bee-yards can reduce bear damage, a modified culvert design can prevent beaver flooding problems or removal of carrion can reduce coyote numbers.

The decision to implement different controls for certain problem wildlife depends less on the amount of damage and more on the traditional role of the individual species of wildlife. While large carnivores have traditionally been the nemesis of the agricultural community, elk and waterfowl are protected through compensation and control programs. The following is a summary of methods employed for problem wildlife management. These methods will be elaborated on in greater detail and per species in the Appendices.

Ungulates (Appendix I)

The general procedure followed by the Fish and Wildlife Division in cases involving ungulate (e.g. elk and deer) depredation is:

1) All complaints are investigated by the District Fish and Wildlife Officer.
2) If the incidence of damage is scattered and light, it is usually recommended that the farmer fence the stack with board slabs. No compensation is provided for stacked forage crops or stored grain.
3) If damage continues, exploders or shotguns are used to scare the animals.
4) In the case of unstored forage crops or unharvested grain, the Alberta Hail Insurance Board makes an assessment of damage and compensation is paid for damage until December 31.
5) If the damage problem is chronic, hunting seasons are adjusted to reduce damage.
6) In no case is a damage permit issued for the destruction of ungulates involved in a depredation problem.

Waterfowl and Other Game Birds (Appendix II)

The general procedure followed by the Fish and Wildlife Division in cases involving game birds (e.g. ducks, geese, cranes) is:

1) The complaint is investigated by the District Fish and Wildlife Officer.
2) If damage occurs prior to or after the hunting season a damage permit is issued for a specified period of time. The farmer must keep a record of the number of birds destroyed. Exploders can be provided to scare birds.
3) If damage occurs after the opening of the hunting season the District Fish and Wildlife Officer assists the farmer in contacting licenced waterfowl hunters to remove and/or scare the offending animals.

4) If the above measures fail to eliminate the incidence of damage, the amount of damage is assessed and compensation is provided.

5) If the damage problem is chronic, preventive action may be taken through bait stations and lure crops where it is economically feasible on a cost:benefit analysis.

Non Game Birds (Apppendix III)

1) Complaints of damage by nuisance birds such as magpies, blackbirds, pigeons, and starlings need to be monitored in order to identify the extent of damage. Further research is required for practical controls.

2) Agriculture provides printed information for damage control for such species as magpies, starlings, blackbirds, etc. Poisoning of magpies with strychnine baits is allowed during the winter by prescribed methods but is being replaced by the effective circular live trap developed recently.

Furbearers and Carnivores (Appendix IV)

1) The complaint is investigated by the District Fish and Wildlife Officer. Some complaints are not valid as evidence is lacking of either a kill (rather than disappearance of livestock) or death caused by a predator.

2) Appropriate control action is instituted when necessary:

e.g.	Beaver -	encouragement of trapping during winter by resident trappers and hiring trappers during summer whenever possible.
	Wolves -	trapping and poisoning at locations of known kills.
	Rabies Control -	poisoning and trapping of skunks in depopulation zones.
	Bear Control -	trapping at damaged yards through leg snares and culvert traps.

3) There will be total utilization of the hide and carcass where possible in the program.

4) Preventive control measures are to be taken by the owner wherever possible.

5) Coyote control is a joint program of the Department of Agriculture and some 80 cooperating municipalities directed at reducing and where possible eliminating damage on livestock farms.

Rodents (Appendix V)

The general objective is to provide for the control of damaging rodents and to keep Alberta rat-free through the following procedures:

1. The Norway rat is a declared pest under the Agricultural Pests Act requiring prevention of establishment and active control by every person, agency and municipality.
2. Agriculture provides provincial coordination and supervision, develops control methods, supplies information and other assistance, training, free bait and grants to municipalities.
3. Two full-time officers of the Pest Control Branch coordinate control activities and assist some 250 pest control officers appointed by urban and rural municipalities to handle local problems.
4. The main work is done in 8 municipalities along the east border where some 3,500 premises are periodically checked and baited as necessary. The 50% grant paid for the cost of 6 municipal P.C.O.s was recently increased to 75%.
5. Anti-coagulant poisons (warfarin) are the main control technique, supplied free of charge to municipalities and residents. Continuous testing and evaluation of rodenticides and other controls is carried out.
6. All known methods of rat prevention and control are used including rat-proofing of structures, clean-up of food and harborage, proper disposal of garbage, trapping, shooting, gassing, etc. with emphasis on individual responsibility and community effort.
7. For other rodents such as ground squirrels, pocket gophers, mice and voles, investigation and field research are carried on to develop practical, safe control measures. Some successful developments are the pocket gopher burrow builder machine and gophacide to replace strychnine bait; effective traps for mice, gophers, ground squirrels and skunks.

   Richardson ground squirrel field research has continued for 3 years to develop alternatives to strychnine baiting e.g. anti-fertility agents. Printed information is supplied to residents on the best known control methods. Assistance is provided by provincial and municipal P.C.O.s as necessary.

General: In all cases an accurate documentation of the extent of reported damage is necessary. The actual incidence and distribution of the problems are necessary, especially for future evaluations of control programs on a cost:benefit analysis.

V. GENERAL AGREEMENT ON CODE OF OPERATIONS FOR JOINT PROGRAM

1. The basic reason for this brief and cooperation between the two Departments is to ascertain that the sometimes conflicting interests of agriculture and wildlife are reconciled and accommodated in the management program. This agreement should also lead to optimum use of existing staff, facilities, expertise and resources.
2. The basic goal in problem wildlife control is to provide service to the public, while maintaining an optimum wildlife population level. In recognizing that residents have the right to protect their person and property, the government will provide the mechanism by legislation, programs, approved methods, and assistance as necessary, to make this possible.
3. The government through both departments should develop a definite policy and programs and announce these publicly in order that all staff and the general public know what can and what cannot be legally done.
4. To ensure that coordination and liaison of policy and program is maintained, it is recommended that there be established a Problem Wildlife Committee, which would have representatives from both departments and possibly from other agencies and which would function as an advisory, coordinating and operational group. This committee would meet as necessary to consider all aspects of vertebrate pests, but at least annually, report to both Ministers and liaison with other organizations such as the A.D.A. Pest Control Advisory Committee. Regional and specific topic subcommittees may also be necessary.
5. There is a need to review and document the extent and amount of the various problems, estimate cost of control and initiate research for solutions. Research requests and supporting grants should be made through respective agencies for continuing research in animal ecology, and methods of damage prevention and control.
6. Continual review and scrutiny is required on legislation to ensure that the public maintains its right for protection of persons and property, and to avoid conflicting legislation in the long term. There are several short term requirements: i) Revision of the Agricultural Pests Act to change the status of the coyote from declared "pest" to "nuisance animal", thereby making control possible but not mandatory. Other "nuisance animals"

considered likely for future declaration and coverage are the various ground squirrels (gophers), pocket gophers, and possibly the skunk and magpie. It is agreed that no game bird, game animal or bird of prey will be declared a "nuisance animal"; ii) The Setting of Poison Act will be revised to up-date and to remove conflicts with the Agricultural Pests Act and the Agricultural Chemicals Act.

7. All staff from both departments involved in problem wildlife control will be properly trained and periodically up-dated on animal ecology and methods of damage prevention and control. Special training courses, such as the A.D.A. Annual Animal Damage Control Seminar, should be jointly planned, supported and implemented for the continuing training of staffs of both Departments, predator specialists, municipal pest control officers, grazing association managers, etc. A Procedures Manual is required for operating staff of both Departments and will be prepared as a cooperative project.

8. Coyote control is important to many farmers and ranchers and should remain as established in 1951 with Agriculture responsible for the agricultural (settled) region and Lands and Forests responsible for the forest (green) region. It is agreed that each department and its staff will consult with the other in any action affecting the others region. This includes the use of any poisons or other control methods and also the implementation of restrictive legislation or other restrictions.

The Department of Lands and Forests will, however, develop a management program in the settled areas of the Province, especially to encourage coyote trapping by resident trappers. Registered trap lines could be made in many of the grazing leases and reserves and community pastures.

Coordination, joint action and mutual assistance are essential in the fringe area of settlement along the forest region, in the provision of permits for the use of power toboggans by selected government staff, municipal pest control officers, regional predator specialists and certain landowners with damage problems.

It is recommended that for practical working purposes, jurisdiction for staff of both departments should be extended to cover a buffer zone extending two miles in both directions from the settled-green area boundary.

9. Control of wolves, cougars, bears and other predators, waterfowl, ungulates and fur bearers shall remain the responsibility of Lands and Forests throughout the province. There are occasional serious problems in the fringe area of settlement along the forest region. Rapid action will be taken to investigate all complaints and if necessary remove or destroy offending animals. Where prompt action is not possible or practical by Lands and Forests staff, the assistance of agricultural and municipal staff and predator specialists will be solicited.
10. The joint program for control of skunks, bats and other rabies wildlife vectors shall remain as established on December 30, 1970 with future changes as necessary and agreed upon under the Central Rabies Control Committee.
11. Bear damage control in bee yards is a serious problem especially in certain parts of northern Alberta. Lands and Forests will supervise a program in the Peace River region and other fringe settlement areas. The program, similar to the 1972 pilot project in the Falher area, will be operated utilizing the assistance of agricultural and municipal pest control officers and predator specialists to work with beekeepers and other residents in prevention and control of bear damage.
12. Beaver flood damage will remain the responsibility of Lands and Forests, working with the Water Resources Division and affected municipalities. Wherever possible trappers and predator specialists will be used to prevent and control flood damage.
13. Waterfowl damage will remain the responsibility of Lands and Forests. Other nuisance birds, such as blackbirds damaging corn and sunflowers, starlings and English sparrows, etc., need to be considered in research and possible damage compensation.
14. The control of field rodents, such as various ground squirrels, pocket gophers, Norway rats, various mice and voles, mainly of concern to agriculture and horticulture, shall remain within the jurisdiction of Agriculture.
15. The use of predacides, such as strychnine, cyanide guns and 1080, in general predator control will be decreased, especially from public use. Research on alternative methods of management and damage control will be encouraged and such methods implemented as soon as practical.

16. The trial concept of using trained regional predator specialists is well received by municipalities and landowners for handling "problem" coyote cases. The landowner pays a nominal fee and action is generally coordinated and supervised by the local municipality. Specialists should be used as much as possible by both Departments for various aspects of problem wildlife work. The best eventual mechanism is likely a contract basis, under municipal or other local supervision.
17. Close liaison must be maintained with vested interest groups and acceptable mechanisms developed for recovering some of the expenditure costs from individuals, organizations and municipalities, as well as funding from general revenue.
18. The principle of high risk areas has to be accepted by agricultural interests where new activities, such as livestock production in fringe agricultural areas, are attempted. Small fields surrounded by bush should not be used for sheep production without the individual accepting predictable losses. If "all-risk" insurance is implemented, such high risk situations should be reflected in the premiums levied.

VI. FUTURE MANAGEMENT OF PROBLEM WILDLIFE

As outlined under item 4 of the General Agreement, the Problem Wildlife Committee, once established, should function as an advisory, coordinating and operational group on all aspects of vertebrate pests. Future management policy and programs should be under continual scrutiny and review by the Committee, as well as by involved members of both Departments.

However there are a number of current developments and concerns that are itemized here for future reference :

1) The problem wildlife team developed in the Fish and Wildlife Division in 1973 has the major objective of handling any significant wildlife problems affecting agriculture or other interests. Control efforts will be balanced to economical returns and to long term preventive measures. Local landowners and trappers will be utilized as much as possible for both preventive and individual animal removal programs.
2) The predator specialists, employed by the Crop Protection and Pest Control Branch on a trial basis during 1973-74, have been well accepted by municipalities and landowners for handling "problem" coyote cases. Such

specially trained, equipped and experienced operators have a place in the future management system. The main problem is the development of an acceptable scheme under which both Departments could use these specialists on a year-round basis, to handle various problem wildlife. The best eventual mechanism is likely a contract basis, under municipal or other local supervision, and funded by landowners serviced or other interest group(s) and both Departments.

3) A Procedures Manual for all personnel involved is urgently needed. Action should commence as soon as possible by the staffs of both Departments to assemble and provide printed information on control methods and techniques for the various problem wildlife species. Such a Manual would serve as the operating reference for staff and the background for special training courses.

4) There is need for review and documentation of the extent and cost of wildlife damage on a regional and provincial basis and a cost-benefit analysis of damage prevention and control.

5) Research should be initiated by both Departments, and funded through grants to research agencies, to provide up-dated information on animal ecology and methods of damage prevention and control.

6) Study is required of funding mechanisms to consider and recover the appropriate share of costs from individuals, vested interest groups, municipalities and other organizations, as well as from public funds.

PRESENT COSTS OF PROBLEM WILDLIFE MANAGEMENT

1973-74 Costs

LANDS AND FORESTS: (includes direct staff, travel, equipment, materials, grants)

Furbearers, Carnivores and Ungulates:

Wildlife Section -	$ 50,000
Enforcement Section - (administrative support, salaries and vehicle purchases excluded)	70,000

Waterfowl:

Wildlife Damage Fund ($3.00/hunter licence) -	375,000
Federal Cost-Shared Program - (includes administrative costs and salaries)	300,000

AGRICULTURE: (includes direct staff, travel, equipment, materials, grants)

	1970-71	1971-72	1972-73	1973-74 Est.
Rodent Control - (Rats, gr. squirrels)	40,000	51,000	55,000	69,000
Animal Pests - (Coyotes, nuisance animals & birds)	15,000	23,000	38,000	35,400
Predator Specialists -	-	-	14,400 (3 mo.)	75,000
Rabies Vector Control:				
Agriculture -	19,530	57,000	27,700	32,560
Lands & Forests -				28,000

MUNICIPALITIES:

RESEARCH:- Canadian Wildlife Service, Universities

INDUSTRY:- bee keepers, cattlemen, sheepmen, crop producers

Sale Value and Estimated Losses

	TOTAL VALUE		TOTAL LOSS	
Industry:	1971	1972	1971	1972
Sheep	1.6m	2.6m	214,000	67,000 (coyotes)
Cattle	290m	300m		
Honey	4.5m	6.2m		
Grain	319m	371m	3 to 5 million $ (waterfowl)	

APPENDICES

APPENDIX I.....UNGULATES

APPENDIX II.....WATERFOWL AND OTHER GAME BIRDS

APPENDIX III.....NON-GAME BIRDS

APPENDIX IV.....FURBEARERS AND CARNIVORES

A. Bear

B. Wolf

C. Beaver and Muskrat

D. Coyote

E. Others

APPENDIX V.....RODENTS AND OTHER SMALL MAMMALS

A. Rats

B. Field Rodents & Small Mammals

APPENDIX VI.....RABIES VECTORS: Skunks and Bats

APPENDIX VII.....SPECIAL PROGRAMS

Appendices will be periodically reviewed by special topic or task groups under the aegis of the Problem Wildlife Committee and up-dated accordingly.

UNGULATES

BACKGROUND

The problem of ungulate damage to domestic food crops probably extends back to the very beginning of primitive agricultural development in North America, particularly when one considers that corn was one of the first major food crops raised. Deer still extensively utilize this food source throughout much of North America today.

In Alberta, ungulate associated problems were not of major public concern until relatively recently. The expansion, into the foothills, of forage production for cattle has resulted in increased destruction by elk of stored forage crops. In part, this problem is aggravated by livestock grazing on traditional elk winter ranges. The deer-cereal crop conflict in the Parklands and fringe agricultural areas of Alberta is sporadic and largely a function of delayed harvest operations due to inclement weather. Both of these problems have been intensified by recent increases in the market value of forage and cereal crops. Moose, although a perennial problem in parts of northern British Columbia, have not been a serious problem to agricultural interests; however, several instances of moose feeding on stacked hay and bales were reported in the severe winter of 1973-74.

The major ungulate problems encountered in Alberta today involve elk depredation on stored forage crops and deer depredation on stored and unharvested cereal crops. The elk problem, concentrated in the Cypress Hills area and the foothills south of Calgary, is perennial and areas of depredation are generally predictable. The deer problem is generally more widespread, sporadic and areas of depredation are more unpredictable. Harvest weather conditions, winter snow depths and the availability of adequate grain storage facilities influence the areas and extent of deer damage. In 1972, 286 claims were filed for deer damage to swathed grain and approximately $20,000 was paid in compensation for this loss. Compensation, however, is a poor measure of actual damage since in most of the actual damage cases claims are not filed. Elk damage to haystacks, for which no compensation is paid, has been estimated as high as $100,000 in some years.

REGULATIONS AND POLICY

Elk damage is perennially the most severe. Extended elk hunting seasons in the Pincher Creek and Cypress Hills areas undoubtedly reduce much of the potential damage. However, damage to haystacks continues to occur particularly where the individual landowner refuses entry to hunters and where elk have a convenient refuge such as Waterton Park. If damage continues, scare permits only are issued. Beyond these measures damage may continue and no compensation is paid. In traditional damage areas some landowners have panel-fenced haystacks and found them very effective in reducing damage.

Generally no action is taken in response to deer damage. Damage to swathed grain may be claimed for under the provisions of the Wildlife Damage Fund (Wildlife Damage Fund Regulations, Sec. 3 - 7), while deer depredation on open-stored grain is the farmer's responsibility and no compensation is paid.

COMPLAINT PROCEDURE

1. The complaint should be filed with the nearest Fish and Wildlife Division office and recorded.
2. Instructions can be given on procedures in filing damage claims.
3. If damage is severe scare devices can be recommended and issued.

FUTURE CONSIDERATIONS

A partial solution to the elk-haystack problem is available in the form of panel fences. The Fish and Wildlife Division should direct its efforts to the production of a lightweight, portable panel fence which can be made available to landowners, particularly those who suffer only periodic damage. At the same time, livestock grazing on traditional elk winter ranges adjacent to chronic damage areas should be reduced to the point where adequate winter range is available for elk. The problems associated with Cypress and Waterton parks can best be accommodated by elk herd reduction, livestock grazing reduction and panel fencing.

The current system of compensation for deer damage to swathed grain is adequate.

A. WATERFOWL

BACKGROUND

Financial loss to farmers from duck species damaging cereal grain crops has been a subject of considerable concern to sportsmen, farmers, and wildlife managers for several decades. The prairie provinces are a major breeding area for waterfowl and Alberta serves as an important flyway for a large proportion of North America's migrating duck species. The problem of duck damage to grain crops is neither unique nor new to Alberta farmers as the potential for crop loss has always been present. With the advent of the windrow combine and the resulting change from stooking and threshing of grain to swathing and combining, ducks have taken advantage of the increased availability of grain as "free food" and have become an annual problem in some areas.

Probably because most crops are being swathed at about the same time that migrating ducks begin to arrive, recurring damage is most severe in the northern portion of the province. Northwestern Alberta has only about 8% of the total cultivated acreage in the province but it sustains about 26% of the reported cases of duck damage. The intensity of duck damage decreases from northern Alberta to southern Alberta.

The amount of damage occurring on any particular area for any year is directly related to the length of time grain crops lie in swaths. The amount of loss occurring is therefore very variable depending on the harvest conditions a community experiences. In 1967, a year of good harvest weather, individual farmers suffered very little crop loss to ducks and the total provincial loss was less than $500,000. Conversely, 1969 was a very poor harvest year and Alberta farmers suffered losses close to $10 million. Although the duck damage data for 1973 is not available at this date, it is expected that the total farmer loss for 1973 will exceed $10 million.

REGULATIONS & POLICY

1. Pre-season shooting permits: The pre-season shooting permit issued under the authority of the Federal Migratory Birds Convention Act recognizes the farmer's right to protect his personal property and allows the farmer to shoot ducks feeding on his crops prior to the regular hunting season. This does not, however, apply to geese or cranes which are more wary and therefore are responsive to other scaring techniques.

In recent years there has been considerable doubt about the effectiveness of shooting permits as a means of damage control. Shooting can be effective on an individual crop site if the crop is watched continuously. In a practical sense, this continued observation is not possible for farmers with several different crop sites, particularly during the harvest season. Consequently, there are facts that show that farmers who have shooting permits do not necessarily suffer less loss than those that do not have permits.

It has recently been theorized that although shooting permits may decrease damage on a particular site they may actually increase losses on a regional basis. The major loss from duck damage occurs from trampling immediately after ducks land in a field. By utilizing shooting permits, farmers are scaring ducks from one field to the next and are actually increasing the damage occurring in a community by making ducks land in several fields.

2. Compensation - Wildlife Damage Fund: In 1961, concern about farmers' financial loss caused by wildlife resulted in the establishment of a Wildlife Damage Fund to be financed with money collected through the sale of a wildlife certificate to each hunter. Through the fund farmers are able to claim for, and collect, partial compensation for the losses they suffer as a result of wildlife damage to crops, particularly that caused by waterfowl.

However, compensation through the fund has not proven to be the ultimate answer to the duck damage problem. The majority of the farmers that suffer crop losses do not make application for compensation. For instance, in 1968, only 12% of farmers suffering losses eventually claimed for compensation. In addition, compensation is neither adequate or equitable. Over several years, compensation for damage to crops has averaged only about 35% of the actual loss suffered. Farmers with highly productive land also suffer a proportionally greater loss than do farmers with poor land as there is presently a maximum of

$25 per acre on compensation payments. A farmer that suffers a loss of $100 per acre will only receive $25 per acre, or 25% of his loss. A farmer that suffers a loss of $50 per acre will also receive $25 per acre, but this is 50% of his loss. For 1973, Alberta compensation claims reached $1,000,000 which is similar to 1969 and above the long term average of under $400,000 per year.

3. Crop Damage Control Program: In view of the shortcomings and limitations of both the pre-season shooting permits and compensation through the Wildlife Damage Fund it seemed advisable to investigate other methods of dealing with the duck damage problem. Consequently, in 1970 the Fish and Wildlife Division initiated a three-year experimental damage control program in an effort to control duck damage to grain crops. The basic components of the damage control program are lure sites, where ducks can feed undisturbed, in combination with a limited field staff that attempts to locate and scare ducks out of farmers' fields towards the lure sites. Lure sites consist of either bait stations which are pieces of lakeshores where grain is spread for ducks, or lure crops which are crops that are purchased, swathed, and left for ducks.

The experimental damage control program proved to be a successful method of combating duck damage under a cost-benefit analysis. With financial assistance from the Federal Government it is now possible to expand damage control work to all areas of the province where recurring duck damage is severe enough to warrant such a program. Expansion of the program has commenced during 1973 and will continue during the next few years into the St. Paul-Vegreville, Camrose - Red Deer - Stettler and Provost - Oyen areas.

COMPLAINT PROCEDURE

In all cases where ducks are damaging grain crops the nearest Fish and Wildlife Division office should be notified. Upon receipt of a duck damage complaint the local office will follow one of several alternatives:

1. If the damage is occurring prior to the regular waterfowl hunting season the farmer may obtain a pre-season shooting permit for duck but not goose or crane damage.
2. If the damage is occurring within a damage control area, the local office will inform the damage control crew or will advise the farmer where he can contact them.
3. If the farmer has suffered losses the local office will be able to inform the farmer where he can file an application for compensation. In most damage cases applications for compensation may be filed at the nearest Treasury Branch.

There are a number of things a farmer can do to help prevent waterfowl damage on his crops:

1. Keep close watch over grain fields and notify Fish and Wildlife at the first sign of field-feeding ducks.
2. Erect scarecrows as soon as the crop is swathed. Simple devices involving plastic can be very effective if erected before ducks begin feeding on the crop.
3. Delay plowing of stubble fields and allow ducks to utilize any waste grain on these fields. This is also a lure site if ducks are not disturbed on these fields.

The farmer should recognize that his initial efforts in prevention are important, not only to protecting his crop but to the success of the whole program. While Alberta enjoys the largest duck harvest of any province in Canada and produces nearly a quarter of the waterfowl for North America, the prevention, control and compensation for damage programs are only effective with the co-operation of landowners. A similar compensation program has recently been started in Manitoba, but is not carried out in the United States where damage is even more significant (e.g. California's celery crop loss by pintails was estimated at $10 million in 1970). In the future an all-risk crop insurance program may be more suitable in identifying high risk areas and in recognizing farmers' preventive measures. It is ironic that with late harvests and bait stations, hunter success becomes adversely affected as it is hunters who started the program and contribute to the Wildlife Damage Fund. Research into manipulating waterfowl populations and hunters in damage-prone areas is mandatory.

REPORTS AND PUBLICATIONS

Annual Farmer Bulletin: Fish and Wildlife Division
Damage Control Program

Alberta Lands and Forests Annual Report

A Study of Waterfowl Damage to Commercial Grain Crops in Alberta: 1969, Renewable Resources Consulting Services Ltd. (consultant's report to Alberta Lands & Forests)

Reactions to the Duck Damage Problem in Alberta: 1974 (unpublished report)
Fish & Wildlife Division

The Duck Problem
Canadian Wildlife Service

NON-GAME BIRDS

BACKGROUND

Blackbirds[1], gulls, magpies, pigeons, starlings and English sparrows are the major species of non-game birds which cause agricultural losses or other damage. Large flocks of blackbirds are an increasing source of damage for corn growers in the relatively new grain corn industry in southern Alberta. Magpies damage livestock by pecking around open wounds from warble grub holes, dehorning scars and brand marks. Large flocks of English sparrows and gulls in feedlots cause economically significant losses by consuming the choicest and more nutritious grains. Fouling of feed and spread of diseases may also be problems.

Bird problems usually involve the key element of the learning of a new food source by a few individuals and the spreading of the habit to other individuals. A classic example of this phenomenon has been documented in England where small birds pecked through milk bottle lids for cream and the habit spread for hundreds of square miles.

Another common feature in bird behaviour is the resistance to change of feeding habits once feeding has begun at a particular site. These aspects of the behavioural ecology of birds point to the importance of implementing prevention programs at the first sign of a bird pest problem. Where new crops are being grown such as corn in Southern Alberta, efforts to repel birds before habits are established will be most successful. If the blackbirds have not fed on corn previously then every effort should be made to prevent the establishment of a destructive habit pattern. Intensified techniques applied later will be more costly and less effective.

REGULATIONS AND POLICY

Because of the variety of bird species and situations under which damage occurs, attempts at protection have been varied:

Frightening devices including acetylene exploders, firecrackers and shooting are at present recommended for blackbirds, (See publications).

[1] Redwinged, yellowheaded and Brewer's blackbird

Localized problems with magpies (e.g. pecking injuries) are dealt with by using the very effective circular live-trap developed by the Crop Protection and Pest Control Branch of Alberta Department of Agriculture. Where circular traps do not work or are not available, problem magpies may be eliminated with strychnine placed in "poison sticks" on poles.

Traps with moveable gable roofs have been developed for starlings and are very effective.

Toxicants and perch repellents such as "Bird-go", Quelletox, etc. are also available.

For most problems, however, attempts at control through eradication are not successful because replacement of individuals is rapid.

COMPLAINT PROCEDURE FOR PROTECTED SPECIES

Injured and dead specimens of protected species, especially birds of prey, should be reported to your local Fish and Wildlife Officer. Arrangements have been made to treat injured birds by Calgary Zoo personnel.

Occasionally, snowy owls are a problem at airports in winter in Alberta. They can be trapped, banded and released in another area by wildlife research scientists if the Fish and Wildlife office is contacted.

RESEARCH NEEDS AND FUTURE PLANS

The need for assistance with blackbird problems will accelerate rapidly as acreage with corn, sunflower and oats continues to increase. Emphasis with present techniques should stress extreme vigilance as the kernels mature so that potential pests will be frightened away before a habit has become established.

In 1973 about one-third of Alberta's corn growers were surveyed and 30% had no blackbird damage. Another fifty percent had less than 5 percent loss. However, as feeding in corn fields becomes more widespread in blackbird populations this situation may worsen. This will almost certainly be the case if the open-husked hybrids become more popular. These hybrids may be "training" blackbirds to peel husks and thus be attracted to other varieties of corn normally receiving less damage.

With respect to the blackbird problem, research should be directed toward answering the following questions:

1. Is there a direct relationship between the proximity of corn fields to roosting habitat and the degree of damage to corn crops?
2. Which corn varieties are least susceptible to damage and how extensive is the damage?
3. How effective are lure crops, such as strips of oats or sunflowers, when used before feeding is well established?

Blackbirds and other flocking species may be especially susceptible to aversive conditioning techniques utilizing vomit-inducing compounds to produce severe alarm reactions. The distress calls and erratic behaviour are potent stimuli within the flock and in mixed species flocks causing withdrawal from the bait grain and the feeding location. The success of this technique using the carbamate "methiocarb" ("Mesurol") has been established under laboratory and field conditions in the United States. Further field trials to improve exposure of birds to treated bait are required. A further need for a diversity of repelling techniques stems from the capacity of many pest species to adapt or habituate to stimuli which are initially effective but with continued contact have little impact on bird behaviour. In some cases success is attained only if new techniques are instituted faster than the birds adapt.

The compound "Avitrol" (4-amino pyridine) is marketed in the U.S.A. for control of blackbirds in corn and other crops. Although protection results from alarm behaviour, this material is toxic, killing a percentage of the birds ingesting the chemical. At present "Avitrol" is registered in Canada for use only around buildings, not for field use. Its potential for use in feedlots and similar situations needs to be established.

REPORTS AND PUBLICATIONS

Blackbirds in Field Crops: 1963, Canada Department of Agriculture, Publication #1184

Sparrow and Starling Control: 1952, Department of Indian and Northern Affairs.

Magpie Control in Alberta: 1963, Alberta Department of Agriculture.

Uninvited Guests - The Prairie Duck Problem: Environment Canada

An Improved Magpie Trap: 1971, Alberta Department of Agriculture, Publication #685/3.

A. BEAR

BACKGROUND

There are two species of bear found in Alberta - the black (Ursus americanus), and the grizzly (Ursus arctos). The black bear, ranging in colour from cinnamon to black, is the most widely distributed of the two, occurring throughout all the major forested areas of the province. The grizzly is most common in the forests of the Rockies, but does occur as far east as the Swan Hills. Both species of bear retire to dens for an approximate six month sleep each winter, emerging each spring with the return of warm weather. Bears are somewhat sluggish in their activities, wandering from one prospective food source to another - often examining many possibilities before settling for a simple meal such as ants, berries or meadow legumes. They are omnivorous, utilizing a great range of foods, primarily vegetation. The fact that they are habitual and orientate rapidly to learned sources of food strongly contributes to the situation in which they often find themselves - a nuisance to man.

Human reaction to bears has changed with changing times. During early exploration and settlement bears were often regarded as troublesome because of their apparent competition for valued game animals - and in many areas they were hunted ruthlessly for their meat and hides. More recently, in Alberta, they have been classed as a big game animal and are hunted for their sporting and trophy value. They are also sought out by tourists and outdoor recreators as an aesthetically pleasing part of the natural environment.

Examples of current conflicts are bear damages to beehives, livestock and bear - man encounters in public campgrounds. The annual onslaught of black bears on hundreds of beeyards in Alberta's Peace River area is a result of typical bear behavior. The bears return to the yards time and time again - taking advantage of the protein-rich bee grubs and the sugar-rich honey. Nature would be hard-pressed to supply such an enticing bear meal. The bear habituates to that learned source of food and a great deal of damage ensues.

HISTORY AND SCOPE OF THE PROBLEM

Unfortunately the extent of bear damages and control work have not been adequately documented over the years. In fact, very few detailed records exist of the history and scope of the problem in Alberta, beyond occasional memos and reports referring to specific bear damage cases. In recent years, officers of the Alberta Fish and Wildlife Division have investigated complaints and in many cases assisted by recommending preventative measures or by removing nuisance bears.

The extent of bear problems reported to the Division was summarized in 1972 and is illustrated below. The list represents all bear complaints handled by the Division in 1972 with the exception of the Peace River area bear-bee conflict. Many damages undoubtedly are not reported.

Complaint Type	Number of Complaints
Campsite	98
Livestock	89
Beehives	42
Farm crops	18
Farmyards	13
Graineries	9
Buildings	8
Human Encounter	7
Cities	4
Air Bases	3
Trailer Courts	3
Tents	2
Trappers	1

In regard to the above complaints, 281 bears were destroyed and 29 were trapped and moved elsewhere; only three of the total complaints involved grizzly bears.

The major black bear conflict at the present time involves black bears in beeyards. That problem results from a combination of good bear habitat, high beeyard density and the ready access bears have to the yards. The bear kill, primarily by local people, has not been carefully monitored, but estimates in recent years suggest several hundred bears have been removed each year. In 1973, in the Peace River area alone, about 400 bears were destroyed as a result of damages to approximately 400 yards. Despite bear control the loss to beekeepers was over 200,000 dollars. The current program involves government-supervised bear removal and evaluations of methods of preventing damage. Beekeepers and government are co-operating in a cost-sharing electric fence program. The effectiveness of electric fences and other devices is under intensive investigation.

Grizzly bear-livestock conflicts are expected to increase somewhat in the mountain and foothill ranch areas following apparent recent increases in numbers of that species.

REGULATIONS AND POLICY

It is legal for any resident of the province to shoot a bear on his property or on private property to which he has lawful access, without a licence, and during any time of the year, in most wildlife management units (see Sec. 6: Game Hunting Regulations).

It is illegal for any person to set out poison for bears; to have possession of any snare or to set out any snare for bears without the authority of a registered trapper's licence; to set out any trap of any kind for bear; to shoot bears with the aid of any type of night-light (see Secs. 24 and 45: Wildlife Act).

The policy of the Division is that complainants should be encouraged to obtain damage permits (Sec. 12(d): Wildlife Act) when it is necessary to remove a bear where a damage situation exists. This permit would provide the lawful right of bear removal, detail the methods allowed, and provide the authority for governmental assistance. Such permits are required in cases of bear removal on crown land.

COMPLAINT PROCEDURE

All complaints involving bears should be directed to the Fish and Wildlife Division. The following procedure is followed by a Fish and Wildlife officer or other authorized government employee upon receipt of a bear complaint.

1. The complaint is investigated carefully to determine the cause of death, injury or damage. If bears were involved their sign (tracks, droppings, claw marks, etc.) is usually easy to detect.
2. Control action, if necessary, should be immediate because of the habitual nature of bears. A trail leg-snare or a baited culvert trap is set in the area.
3. Upon capture the bear is either moved and released or destroyed. Cub bears should not be destroyed, but provided to zoos and other agencies through the normal procedure.
4. Detail of investigation and action is recorded on the complaint form.
5. Recommendations of methods of preventing damage should be made.
6. Complainant should be advised accordingly when Livestock Disaster Indemnity Program applies.

RESEARCH NEEDS AND FUTURE PLANS

There is a definite need to continue to direct research towards the development of methods of preventing damage and thereby reduce the necessity of bear destruction. The recent development of bear-proof waste disposal sites in some National Parks is encouraging. Similar research is required to determine the most effective means of preventing bear entry into beeyards and other areas. Current studies of electric fences and repellants, including territorial scents and taste aversion chemicals, should provide valuable information.

REPORTS AND PUBLICATIONS

How to Avoid Being Stung by Bears (information pamphlet)
Manitoba Department of Mines and Natural Resources

Background for Managing Grizzly Bears in the National Parks (published report)
Canadian Wildlife Service

Black Bears of Washington (published report)
Washington State Game Department

Evaluation of Black Bear Damage to Apiaries in the Peace River Area: 1973 (unpublished report)
Alberta Fish and Wildlife Division

B. WOLVES

BACKGROUND

The timber wolf (Canis lupus) is the species that occurs in Alberta. Although grey may be the predominate color, individual wolves from the same area or in the same family may vary from pure white to brown or black. Wolves are distributed throughout the northern half of Alberta, as well as through the mountain and foothills area, south to the Highwood River. Although an occasional complaint of wolves in the Provost and Vermilion area has been recorded, very few sightings of wolves following watersheds into the prairie or parkland regions have been documented.

Wolves take a variety of foods, ranging from moose to mice and including all forms of livestock, but their normal diet is largely comprised of wild ungulates. They travel in "packs" which usually consist of a mated pair and their pups, yearlings and two-year-old offspring. Occasionally the pack will include several wolf families, but intermingling is usually of short duration.

Human reaction to wolves varies a great deal. To some, the wolf is symbolic of Alberta's great outdoors and many organized groups tend to become overly-protective when there is any suggestion of control measures. The wolf is of great significance as a predator in wildlife ecological relationships, and has recently become valued as a trophy animal to the hunter. It is also a furbearer and the monetary return to trappers is important. However, wolves are a problem to the livestock industry, particularly in the fringe areas between forested land and settled lands. The wolf population has increased within the forested areas over the past 20 years following the rabies program of 1952-56 when they were nearly eliminated. Wolf range now extends to include the settled and privately owned land as well as grazing leases within the green area. There has been only one documented case in North America of a wolf attack on a human, and that was by a rabid wolf in Alberta in the 1950's.

HISTORY AND SCOPE OF THE WOLF-LIVESTOCK CONFLICT

The wolf-livestock problem has escalated in Alberta in recent years with the numbers of complaints increasing as the wolf population rises. Although the majority of complaints occur in the northern half of the Province, damage to livestock has been noted in various areas of the foothills and mountains of western Alberta south to Cochrane. In the past, damage has occurred as far south as Pincher Creek, the historic range of the now extinct (in Canada) grey or Montana wolf (Canis lupus irremotus). Due to a lack of adequate proof of wolf kills, an accurate account of wolf damage to determine the total extent of wolf predation on livestock has been almost impossible to document. However, claims submitted to the Livestock Disaster Indemnity Program and individual documented cases can provide meaningful figures.

Wolf control dates back to the 1630's, when depredation to livestock became so severe in Massachusetts and Virginia that a wolf bounty was established. In Alberta during the 1850's, the Hudson Bay Company was engaged in strychnine poisoning of wolves along the upper Athabasca valley. At this time, wolves were killing company horses and as many as ten wolves were taken at one time on a baited horse carcass. Since the 1800's, there have been periods of high and low wolf populations in Alberta. A marked increase in the population in the last ten years may be a response to the termination of the Province-wide rabies control campaign of the 1950's.

During the 1972-73 fiscal year, the Fish and Wildlife Division received 74 wolf complaints and removed a total of 72 wolves. An additional 42 wolves were taken by landowners and other Government agencies. Fifty of the complainants reported actual losses with 276 head of livestock claimed as taken by wolves in an area from the Calgary region (seven complaints), north to the Peace River region (23 complaints). Three hundred and nineteen other animals were taken in this program, including six eagles and 89 coyotes. During the 1973-74 fiscal year (up to and including March 1, 1974), the Fish and Wildlife Division received 77 wolf complaints and removed a total of 87 wolves with a reduced loss of non-target species (from 319 in 1972-73 to 199 in 1973-74). Many cases of wolf depredation remain unknown as they have

occurred on grazing leases and often in areas under conditions of poor supervision. Only a minimum estimate of losses can be obtained through the Livestock Disaster Indemnity Program, e.g.:

	complaints	livestock loss	cost of loss
1972	22	110	$14,993
1973	38	289	$17,305
1974	39	166	$17,586

N.B. 1972 and 1973 claims were retroactive with inception of program in 1974.

Although some damage has occurred in the settled area far removed from the forested area of the Province, the majority of wolf depredation occurs on fringe agricultural land

REGULATIONS AND POLICY

It is legal for an Alberta resident[1/] to shoot a wolf upon his private land, and upon other private land with the consent of the owner or occupant thereof, in Wildlife Management Units[2/] G102-166, P200-260, F300-314, 320-324, 332-336, 340-350, and 358, S410, M500-510, 514, 522-526, without being the holder of a permit or licence. (The above W.M.U.'s cover most private land in Alberta).

Any resident in possession of a valid and subsisting Wildlife Certificate and a subsisting licence to hunt big game may, within the period

Note:

1/ a resident is defined in the Wildlife Act as "a person who makes his home and is ordinarily present in Alberta, and
(i) who has resided in Canada for the 12-month period immediately prior to the date of his application for a licence or permit, or
(ii) who has not resided in Canada for the 12-month period immediately prior to the date of his application but is a Canadian citizen domiciled in Alberta,
but does not include a tourist, transient or visitor to Alberta."

2/ W.M.U. - see the Game Synopsis.

of opening of the big game season to May 31st following, hunt wolves in W.M.U.'s F316, F318, F326-330, F338, F351-356, S400-408, S412-446, M512, M518-520, M528-538, and on public lands lying within W.M.U.'s G102-106, P200-260, F300-314, F320-324, F332-336, F340-350, F358, S410, M500-510, M514, M522-526.

Wolves are classified as carnivorous furbearers and it is illegal for non-resident (alien and Canadian) hunters to hunt wolves.

It is legal for trappers on registered traplines and resident trapper licencees to hunt and trap wolves from September 1st to April 30th. Registered trappers may also use snares for the taking of wolves on registered traplines except within the boundaries of Forest Reserves (along the Foothills)3/. Landowners require a licence to trap on their own land,

It is illegal for landowners or any other person, except those authorized by the Fish and Wildlife Division, to poison wolves in any part of the Province.

The policy of the Division is that complainants should be encouraged to remove nuisance wolves by legal means and, when necessary, advise the nearest Fish and Wildlife Office immediately.

COMPLAINT PROCEDURE

1. As the Fish and Wildlife Division is responsible for wolf control and management, all complaints shall be referred to the nearest Fish and Wildlife Office immediately.
2. Upon receiving a complaint, Fish and Wildlife personnel shall immediately investigate and assess damage. In the absence or unavailability of Fish and Wildlife personnel, the local predator specialist of the Department of Agriculture can make the initial investigation. In this case the specialist will report his findings to the nearest Fish and Wildlife Office as soon as possible so that control measures can be implemented if necessary. An example of the complaint form is attached. This should

Note:

3/ this may be changed in the near future.

be completed for your records, for use in the Livestock Disaster Indemnity Program claims and for Regional Fish and Wildlife Office information.

3. Complaints are of three types:
   (a) wolves too close to habitation. No government control to be taken unless unusual circumstances exist, such as wolves in urban environment or a suspected rabid animal. It is legal for individuals to shoot wolves on private land.
   (b) wolf kill of domestic dog. No control to be taken unless further damage expected.
   (c) wolf damage to livestock. With confirmed complaint, prevention and/or control techniques may be advisable and, if so, should be carried out immediately.

On Private Land: If other methods of improved management (e.g. herd vigilance) and trapping are inadequate, control using strychnine baits may be employed with the objective of removing the nuisance animal or pack. Authorization is required from the landowner and Regional Fish and Wildlife Office. Where damage cannot be confirmed, the complainant is to be advised that action will be taken if further confirmed problems arise. The complainant should be encouraged to notify Fish and Wildlife immediately. Control may occur up to six miles inside the green area in respect to damage occurring on private land outside the green area. In special circumstances, control measures may be employed up to 12 miles with authority from the Regional Biologist and Regional Fish and Wildlife Officer.

On Grazing Leases, Permits, Allotments: Government control of nuisance wolves will be minimal depending on location of the problem relative to private land. Livestock are in the area during the summer when wolf control by poisoning is difficult and generally ineffective. Lessees will be notified that predator control will occur as a last resort after other techniques are employed and this will be indicated on all renewal of leases, permits and allotments as follows:

The Lessee or Permittee must recognize that cattle losses due to predation can be significant on remote area leases, permit areas or grazing allotments. Compensation for cattle losses can be claimed for through the Livestock Disaster Indemnity Program. Confirmation of losses is required by inspection of a Fish and Wildlife Officer.

The "Green area" is managed for all natural resources. Most wildlife, as a natural resource, are generally managed through hunting and trapping seasons. The lessee is eligible for compensation of predator loss in all areas under the Livestock Disaster Indemnity Program. In high risk areas, intensive trapping will occur. Fish and Wildlife Officers will document all losses for the Livestock Disaster Indemnity Program and provide technical assistance in resolving confirmed problems. Lessees and Permittees can obtain a Damage Permit for taking wolves within the lease. Wolf pelts will remain the property of the crown. All wolves taken under the authority of a Damage Permit must be reported to the local Fish and Wildlife Office.

Private Land Within the Green Area: A working plan for the few isolated problem areas will be formulated.

All control programs carried out using poison must be authorized by the Regional Wildlife Biologist and Regional Fish and Wildlife Officer.

4. No control should occur where there is no direct evidence of wolf-caused damage. General losses realized after the fall roundup that are claimed as wolf damage but without evidence of the same should not result in depopulation attempts the following winter. Complaints of this nature, resulting from minimum cattle management during the summer, are not accepted by the L.D.I.P. and should not be accepted for wolf control purposes.
5. The complainant should be informed of the L.D.I.P. and, on request, should be given the necessary forms.
6. The complainant should be advised of proper cattle management techniques to reduce predator losses.
7. All wolves (and other animals) that are collected by the Division or other agencies are the property of the crown. The pelt must be properly handled and given to the nearest Fish and Wildlife Office.

8. Procedures involving the use of strychnine.

There are three techniques most commonly used in strychnine poisoning of wolves:

(a) Placement of strychnine in one bait which should be restricted to a portion of a carcass no larger than a quarter of an ungulate. It should not be necessary to use more than ten strychnine cubes per bait. The bait should be frozen or rendered immovable by some other means and, in winter, completely snow-covered at all times.

(b) The second technique involves the placement of an unpoisoned draw-bait surrounded by a maximum of 15 bite-size portions of meat, each with one strychnine cube. The poisoned baits should be thrown into deep snow or placed in snow scent-piles at a depth of six to eight inches and at a distance of ten to twenty yards from the draw-bait.

(c) The third technique involves the use of strychnine during summer. Baits, up to the size of a beaver carcass and with a maximum of six strychnine cubes, are buried under a minimum of six inches of soil. Various types of scent may be used around the poison station such as salmon oils, beaver castor and oil glands, or prepared wolf scents. All strychnine stations should be in open areas, such as adjacent to lakes, ponds or in meadows. All baits must be identified by official Alberta Lands and Forests poison signs or other poison signs as regulated by the Agricultural Pests Act.

Strychnine baits may remain in place to a maximum of 30 days unless authorization for an extension is granted, and must be inspected at least once per week and more often, if possible. All wildlife or other animals taken at strychnine stations must be recorded on the wolf damage record sheet; all pelts of furbearers and furbearing carnivores must be salvaged and all carcasses collected for biological analysis. Consult the Fish and Wildlife Officer for disposition of non-target species. At the termination of the wolf control program, all poison stations must be inspected and all remaining materials collected and burned.

RESEARCH NEEDS AND FUTURE PLANS

There is a definite need to direct research toward the development of methods, other than strychnine poisoning, for removing problem wolves. Techniques involving snaring, the use of "coyote-getters" and encouraging trappers to trap wolves should all be pursued. The adoption, in Canada, of the U.S. ban on all predacides is a distinct possibility and hence the development of other techniques is urgently required.

The Livestock Disaster Indemnity Program helps to alleviate the need for intensive efforts of wolf control along the fringe agricultural areas by providing compensation to livestock producers with proven losses to predators. However, compensation programs, such as L.D.I.P. and other insurance plans proposed in the future, should identify "high risk" areas as well as additional areas where control is necessary.

Research should also be carried out on methods other than wolf control for preventing livestock damage, such as understanding wolf behaviour and adapting management techniques. Educating livestock owners in cattle management and an examination of present and future grazing areas along the fringe agricultural areas are important. In the future, grazing lease and permit and allotment applications should include reference to acceptance by the lessee of some loss to predators. As a preventive measure, pregnant cows and young calves should be prohibited from leases with a history of chronic damage.

The Problem Wildlife Committee will be contacting the Lands and Forestry Divisions in regard to cattle management techniques as alternatives to predator control. An assessment of all grazing leases, permits and allotments, particularly in the Green area, should occur with Fish and Wildlife Division involvement to determine potential predator problems. A more comprehensive cost-benefit analysis of the wolf damage program is required on an annual basis. Reliable on-site documentation of wolf attacks is necessary, not only for L.D.I.P. but also for determining techniques in reducing and preventing damage.

REPORTS AND PUBLICATIONS

Pimlott, D.H. 1961. Wolf Control in Canada. Canadian Audubon.

Theberge, J.G. 1973. Wolf Management in Canada through a Decade of Change. Nature Canada.

Mech, L.D. 1970. The Wolf. The Natural History Press.

Mech, L.D. 1966. The Wolves of Isle Royale.

Gunson, J.R. 1973. The 1972-73 Wolf Control Program in Alberta. Alberta Fish and Wildlife Division internal report. 19 pages.

Russell, L. 1974. Peace River Region Wolf Damage Control Program 1973-74. Alberta Fish and Wildlife Division internal report. 9 pages.

WOLF DAMAGE RECORD SHEET

Division _____ District _____ Personnel _____

Damage Record

Complainant _____ Complaint No. _____

Address _____ Date Received _____

Location of Damage _____

Date of Damage _____ Type of Domestics _____

Describe Damage _____

_____

_____ $ Loss _____

Does Survey Indicate Wolves Involved: Yes No Unknown

If Yes, Describe Evidence _____

_____

_____

If No or Unknown, Provide Details _____

_____

Previous Stock Losses from: Wolves _____

Disease _____ Other Causes _____

Additional Comments _____

_____

Action Record (Provide as many details as possible such as dates action commenced and terminated; locations, wolves taken, other animals, etc.).

Trappers _____

_____

Trap/Snares Sets _____

_____

Bait Stations _____

_____

_____

Wolf Record (All wolves taken should be numbered and collected)

No. of Wolves Taken _____ Specimen Nos. _____

C. BEAVER AND MUSKRAT

BACKGROUND

Beaver (Castor canadensis) are the largest rodent and occupy the greatest range of any mammal found in North America. They range throughout Alberta wherever their water and food needs are met. Their food consists mainly of deciduous bark and twigs. They construct dams of mud, sticks and grass, which are often built at constricted areas of flow such as narrow shallow sections of creek or culverts. The dams cause water backup which often floods roads and farm lands.

Beaver are monogamous, usually mating at two or three years of age. Both kits and juveniles stay over winter with the adults; this can result in an many as ten to 18 beaver per lodge although the usual number is between five and ten.

Beaver are important fur-bearers with 61,982 pelts being harvested in Alberta during the 1973-74 season for a raw fur value of 1,137,369 dollars. Although pelt values of all fur-bearing animals vary from year to year, the value of beaver pelts tends to fluctuate the least.

Beaver present problems by flooding and cutting trees - the worst areas being the central Parkland of Alberta. On flat land a three foot high dam can flood up to 100 or more acres of hayland, pasture or cropland. People owning acreages along rivers and lakes often become concerned with tree loss. Most damage occurs in the summer during open water when beaver hides are at their lowest quality.

The muskrat (Ondatra zibethicus) is a semi-aquatic rodent found in Alberta wherever there is water but prefers shallow marshy areas. It feeds on roots and stems of a variety of emergent and aquatic plants and uses many of the same plants in the construction of houses, nests, feeding huts and over ice push-ups.

The muskrat increases rapidly in numbers with up to three litters per year and an average of seven young per litter. Heavy natural mortality or an adequate trapping harvest is necessary to offset annual increment. Mortality results from intraspecific strife, disease and predation.

The muskrat is one of the most important Canadian fur-bearers. Around 211,000 were trapped in Alberta during 1973-74 and sold at an average price of two dollars and twenty-four cents per pelt. This is a reduction of 55,000 from the previous trapping year which is partly due to a shortened trapping season because of the long winter.

HISTORY AND SCOPE OF THE PROBLEM

Beaver problems have existed for years, although increasing beaver populations and an expanding agriculture have amplified the situation. Increasing complaints and high water appear to coincide. During 1973 the Alberta Fish and Wildlife Division received 804 beaver complaints, with other agencies and farmers handling other complaints that were never recorded.

Nearly all muskrat damage is incurred by tunnelling. In southern Alberta tunnelling causes seepage of water from irrigation structures. Railroad and road grades suffer damage from softening when tunnels let in water. Pasture and other agricultural lands are subject to muskrat runs. These runs are quite shallow with only a thin layer of soil covering them and are easily penetrated by livestock, often resulting in broken legs.

Complaints on both beaver and muskrat start with the advent of spring and last until freeze-up.

Beaver damage is severe enough that the Alberta Fish and Wildlife Division employs several trappers to remove beaver and their dams with the total expense for removal during 1973 estimated at over fifty thousand dollars. Failure to harvest sufficiently usually leads to over-population and diseases such as tularemia.

REGULATIONS AND POLICY

Trapping of beaver and muskrat is permitted under a Registered Trap Line, a Resident Trapper's licence, or a Game Damage Permit. All these are regulated under the General Game Regulations made pursuant to The Wildlife Act.

In areas where damage occurs, the following control measures may be implemented:

1. Damage permits may be issued by Fish and Wildlife Officers to individual land owners or local governments to remove beaver and muskrats. The Department of Highways and railroad and irrigation companies may use their own employees to do this work.

2. Where it is deemed necessary, government trappers remove beaver and/or dams, or muskrats; this is mostly done during the summer months when pelts are not prime. Beaver are both live and dead trapped, although the increasing beaver population has limited suitable release areas.

3. Alberta Fish and Wildlife is co-ordinating an intensive trapping program in chronic damage areas. In this program the pelts are retained by the trapper as payment for his labours. The program is carried out over the fall, winter and spring months when pelts are prime.

COMPLAINT PROCEDURE

All beaver and muskrat damage complaints shall be directed to the nearest Fish and Wildlife office. Complainants should supply necessary information as to the legal land location and extent of damage. Control measures, as listed above, may then be utilized as required.

RESEARCH NEEDS AND FUTURE PLANS

Alternative methods to dam and beaver removal are needed. Dam removal results in the short-term destruction of important aquatic habitat and beaver removal is often wasteful and may lead to adverse public reaction. During 1974 a beaver flood control study was initiated. Specially designed wooden and metal culverts were placed in beaver dams causing serious flooding. Water level control was effected in over half of the areas and the study will continue in 1975.

PUBLICATIONS AND REPORTS

The Beaver in Ontario. Ontario Ministry of Natural Resources.

The Beaver in Colorado. Colorado Game, Fish and Parks Department.

Muskrat Populations. Iowa State University Press.

Muskrats and Marsh Management. The Stackpole Co., Harrisburg.

D. COYOTES

BACKGROUND

The coyote (Canis latrans) is a familiar sight throughout the province of Alberta. On the average, this subspecies ranks among the largest of North American coyotes and weighs from 18 to 40 pounds when fully grown. It is buff-greyish to light brown in color with a bushy, cylindrical tail and compares generally in size with the domestic canine. The coyote mates in late February and the litter of pups, numbering five to seven on the average, are born in their den in late April or early May. This is a time of increased predation by the adults as the young require a substantial amount of food. By late summer the pups are about half-grown and able to accompany the adults on field trips and learn the arts of hunting and self-preservation.

The coyote has very successfully adapted to changing habitat and food sources and has learned to survive in close proximity with man as agricultural settlement increased throughout the province. The grain producers generally appreciate the assistance of coyotes in rodent control; however, there is a definite conflict between stockmen, particularly sheep producers, and this predator. Therefore, coyote management is necessary to ensure the least amount of loss and harm to livestock production compatible with the interests of wildlife and the environment.

HISTORY AND SCOPE OF PROBLEM

As human settlement increased in Alberta, it was found necessary to take government action to protect furbearers and other wildlife. Initially, the Alberta Department of Agriculture administered control of fish, game and furbearers but in 1941 responsibility for control of predatory animals such as coyotes, wolves, cougars, etc. was turned over to the Department of Lands and Forests. In 1951, due mainly to pressure from livestock producers, the responsibility for coyote control in the settled agricultural areas was transferred back to the Department of Agriculture under the Agricultural Pests Act, with the Department of Lands and Forests retaining control of coyotes in the forest or "green" area.

In Alberta, the greatest incidence of coyote depredation generally occurs in areas of high sheep production - i.e. southwestern Alberta and areas of relatively recent agricultural development extending toward the green areas to the west and north and in the Peace River country. Predator losses add further to the already high cost of production and today there are a number of government services available to the livestock producer to assist with various phases of livestock production i.e. nutrition, disease control, animal husbandry, management and the financing of the compensation program for livestock losses (Livestock Disaster Indemnity Program) as well as control programs for coyotes and other predator damage.

REGULATIONS AND POLICY

The coyote control program is consistent with Alberta Agriculture's Vertebrate Pest Control Policy in that coyotes are recognized as having both positive and negative social and economic values. Information and control assistance is provided to stockmen to prevent or reduce damage and loss but with no attempt at total species control.

By interdepartmental agreement, Alberta Lands and Forests handles coyote control, if necessary, in the forest or green region. In the settled or agricultural regions, Alberta Agriculture operates a co-operative program through the Agricultural Service Boards of municipal governments. Municipal officers and land owners are trained and certified in the proper and safe use of control materials as authorized under the present Agricultural Pests Act and Regulations.

More recently, regional predator specialists have been established to assist municipal officers and farmers with cases where routine control measures are insufficient. In addition, predator specialists assist agricultural fieldmen and district agriculturists in arranging local training sessions aimed specifically at providing assistance and information to livestock producers and producer associations. These seminars are sponsored under the Alberta Department of Agriculture and are carried out by the staff of the Plant Industry Division.

At the present time, control of coyotes in the settled agricultural regions of the province is authorized under the Agricultural Pests Act and:

1. Regulations Respecting the Control of Coyotes 373/61
2. Regulations Governing the Use of Compound 1080 380/59

A person in possession of a Form B certificate of training may obtain, from an authorized pest control officer, the materials and devices for coyote control upon signing a Form C Release. He may then use said materials on land which he owns or has under his control. An authorized pest control officer, upon obtaining a Form D Permission to Enter and Set, from the landowner, may then use materials and devices to control coyotes on the aforementioned land.

The use of compound 1080 is closely regulated. All baits are prepared and stockpiled by authorized personnel of the Alberta Department of Agriculture. Municipal pest control officers and predator specialists assist in bait preparation and selection of bait sites which must be approved by the Alberta Department of Agriculture. They also retain responsibility for placement, supervision and eventual disposal of these 1080 baits. All lands where materials and devices have been set must be properly posted with warning signs and detailed records kept of the exact location of the devices, materials or baits set out.

In the near future, the new Agricultural Pests Act, 1974 and the new Regulations regarding coyote control will come into force. Under the new Act, the coyote will be removed from the list of named pests and, instead, will be named a nuisance animal. This will eliminate the compulsory aspect of controlling coyotes and will allow the individual the right to control these animals if it is deemed necessary to prevent predation and protect livestock.

COMPLAINT PROCEDURES

In the settled agricultural regions of the province, all complaints of coyote damage to livestock should be handled in the following manner:

a) The livestock producer must take initial action where damage occurs. In most cases, he will request assistance from the municipal pest control officer or the agricultural fieldman. Complaints should be registered as soon as possible after predation occurs.

b) Upon receipt of a coyote complaint, the agricultural fieldman should attempt to determine the authenticity of the complaint, the predator responsible, type of damage or loss sustained and where possible, provide effective control measures to reduce predation and loss.

Municipal agricultural fieldmen who have been appointed as pest control officers have, for the past 23 years, been provided with materials and devices by the Alberta Department of Agriculture to assist with coyote control measures. Under the Agricultural Pests Act and Regulations for coyote control, Alberta Agriculture supplies the following free of charge: strychnine in cube form; prepared strychnine drop baits; components and cartridges for cyanide guns; poison warning posters; all related forms for the release and use of these materials. Where 1080 baiting is approved, municipal fieldmen assist in the setting, care and disposal of 1080 baits prepared by provincial officers.

If more assistance is required than routine control measures can provide, the agricultural fieldman may contact the regional predator specialist who will provide specialized methods and techniques and aid in a joint program to control the problem.

c) The regional predator specialist, upon receipt of a complaint, will assess the situation, determine the type of predation or loss and recommend and assist with effective control procedures. He may elect to train and release materials and devices to be used by the livestock producer or he may deem it necessary to directly aid in eliminating the problem, i.e. a killer coyote, under which circumstance a retainer fee is collected from the producer. This fee is then

turned over to the municipality in which the producer resides. In addition, the predator specialist may provide additional advice on management practices in general and recommend preventative steps to be taken to avoid future losses. His job is to work in close co-operation with the local agricultural fieldman and provide him with copies of release forms, damage complaint forms, etc. His duties also include documentation of livestock losses under the Livestock Disaster Indemnity Program.

d) District Fish and Wildlife Officers should be notified immediately regarding complaints of bear, wolf, cougar or lynx predation on livestock, either directly by the producer or by other government agencies who have verified the identity of the predator. Conversely, complaints of coyote depredation received should be relayed to the Alberta Department of Agriculture staff or the local agricultural fieldman for further action. Fish and Wildlife officers in the field may assist in investigating and documenting predator damage under the Livestock Disaster Indemnity Program.

e) The District Agriculturist, as an extension agent of Alberta Agriculture, provides information on livestock management, coyote control and where assistance is available. He represents the Alberta Department of Agriculture on the Agricultural Service Board and assists in formulating policies and programs. Where and when necessary, the District Agriculturist may provide direct control assistance and document losses for compensation.

f) Alberta Department of Agriculture staff working under the direction of the Branch Head, Crop Protection & Pest Control, have the overall responsibility for coyote control in the agricultural areas of the province. The Supervisor of Animal Pest Control initiates new policies and programs and maintains liaison with other government agencies and departments, municipal authorities, livestock associations, and others concerned with predator control. The Animal

Pest Control Field Supervisor is responsible for maintaining an effective coyote control program using the joint efforts of the local agricultural fieldman, the regional predator specialist and other government agencies to ensure that the livestock producer who complains of losses is provided with advice and effective assistance to keep livestock losses at a minimum.

RESEARCH NEEDS AND FUTURE PLANS

There is a continued need to direct research in such areas as biological control, preventive devices, repellents and aversive bait conditioning. As agricultural areas become more densely settled and new areas are opened up to livestock production, the use of the gun, the trap and poisons will, of necessity, become more limited and other methods of preventing predator damage to livestock must be researched and put into practice. Some of the areas of coyote control that should be researched in greater depth include the following:

1. repellent eartags
2. neck collar devices
3. tranquilizer tabs
4. aversive bait conditioning

REPORTS AND PUBLICATIONS

Vertebrate Pest Control Policy: Alberta Department of Agriculture
Agricultural Pests Act, 1960
Regulations Respecting Control of Coyotes...373/61
Regulations Governing the Use of Compound 1080...380/59
*Agricultural Pests Act, 1974
*Regulations re: Coyote Control
*Regulations re: Compound 1080 Use

*Note: The new Act and Regulations have not as yet come into force.

E. OTHER FUR-BEARERS

BACKGROUND

Other fur-bearers that are an occasional nuisance to man include lynx, bobcat, fox, badger, skunk, mink, weasel, raccoon, red squirrel and hares. Skunk and hares are dealt with in other sections and will not, therefore, be considered here. Many of these fur-bearers are sought after by trappers and constitute important fur resources. For example, in 1972-73, 18,084 lynx, 15 bobcat, 1,844 fox, 2,562 badger, 13,632 mink, 36,791 weasel, 17 raccoon and 157,388 red squirrels were harvested and sold through the fur industry for a combined sale value of $2,069,407. Because of their value as fur-bearers most of these species may be legally taken only during open seasons and under the authority of a trapline certificate.

Fox, mink and weasel are found throughout Alberta; lynx and red squirrels are generally associated with the forest areas of the province, including boreal, parkland and montane-subalpine; raccoon and bobcat normally occur only in the very southern and south-western sections of the province; and badger occur most commonly in the grassland areas, especially rangeland. Some recent trends in abundance of these fur-bearers are noteworthy. Fox have been increasing in numbers gradually over the past ten years throughout Alberta and appear to be currently reoccupying range that was devoid of fox for many years. Lynx reached peak numbers in most forested areas in 1972 following the most recent peak in snowshoe hares. Raccoon appear to be extending their range northward in Alberta and badger have recently become most common in marginal habitats such as the parkland part of the province. Numbers of mink, weasel and red squirrels fluctuate widely from one year to another in response to habitat and food availability.

HISTORY AND SCOPE OF THE PROBLEM

The majority of depredations caused by the smaller fur-bearers are probably not reported, and in most cases property owners probably handle their own problems either by removing the guilty fur-bearer or by constructing varmint-proof enclosures. The number of such complaints submitted through Fish and Wildlife Division offices in 1972 is summarized below:

Lynx.....36
Bobcat..... 9
Fox..... 5
Badger..... 6
Mink..... 2
Raccoon..... 2

The problems associated with these other fur-bearers are as varied as the animals themselves. Many of the above carnivores raid poultry farms, occasionally killing many birds. Red squirrels are a nuisance around graineries because of their borings and storage of foreign food materials. Raccoons, badgers and fox create unwanted burrows around farm buildings and fields. Raccoons raid vegetable gardens and larger carnivores such as lynx and bobcat occasionally kill livestock lambs and calves.

In most cases the problems are not too serious and economic losses are generally low. One example of a serious loss caused by one of the above fur-bearers occurred in 1964 in the Pincher Creek area. Lynx were abundant in the area at the time and it was not uncommon to observe them by roadsides and in agricultural areas. During the summer a number of lynx began killing domestic ducks and geese in a large breeding flock of about 10,000 birds. Before the six or seven lynx were removed over 1,000 birds had been destroyed.

REGULATIONS AND POLICY

It is legal for a resident, without a licence, permit or trapline certificate, to kill any fox or raccon upon his private lands or other private lands with permission, and upon unoccupied crown lands in some W.M.U.'s (see Sec. 7, General Game Regulations); and to kill any bobcat in that area of the province lying south of Highway 3 and east of Highway 2; and any badger, except in the Municipal District of Pincher Creek No. 9.

With the above exceptions, it is illegal for any person to trap or hunt fur-bearing animals unless he is the holder of a valid licence, permit or trapline certificate (Sec. 7, General Game Regulations).

Where it is illegal to remove the offending fur-bearer the complainant should be encouraged to obtain a damage permit (Sec. 12(d), Wildlife Act) from his local Fish and Wildlife Division office. This permit would provide the lawful right of removal, detail the methods involved and provide the access of governmental assistance.

COMPLAINT PROCEDURE

Complaints involving fur-bearers should be directed to the Fish and Wildlife Division.

1. All complaints should be recorded.
2. Where the complainant has experienced severe or repeated depredations, an investigation should be conducted.
3. Methods of preventing loss through improved husbandry, such as fencing, etc. should be evaluated.
4. Damage permits are to be issued when it is necessary for the landowner to remove protected fur-bearers.
5. The results of control activities are to be recorded on the complaint form.

A. RATS

BACKGROUND

The Norway rat (Rattus norvegicus) is reputed to be the most destructive and obnoxious animal pest in the world. Alberta's program pertaining to this species is unique in that it strives for complete elimination and extermination of this pest. The following is a brief outline of the procedures to be followed by field personnel, other authorities and the public with respect to Alberta's rat control program. The procedures outlined are not new and have been responsible for keeping Alberta basically free of Norway rats for the twenty-third consecutive year. This program has provided Alberta with the reputation of being the largest land mass in the world which has remained free of rats.

REGULATIONS AND POLICY

The authority for rat control is contained in the Agricultural Pests Act and under that Act the Norway rat is officially named a "pest" by ministerial order. Under this Order it is the legal responsibility of every person in the province to destroy or control Norway rats. Every municipality, city, town and village is required to appoint a local Pest Control Officer to be responsible for rat control in each respective area. There are over 250 pest control officers appointed throughout Alberta. The areas of activity can be divided into two parts:

1. The Alberta/Saskatchewan border: In that Alberta is geographically isolated on the north, west and south, the major threat of migrating Norway rats is from the east by way of Saskatchewan. Eight pest control officers (fulltime rat control) have been established in each respective county adjacent to the Alberta/Saskatchewan border. Rat control officers are located at Bonnyville, Kitscoty, Chauvin, Provost, Oyen, Acadia Valley and Medicine Hat. The program in this area is intensive and landowners and other members of the public, including government officials, are asked to assist by reporting any known or suspected Norway rats to their local pest control officer. Control measures are recommended and supervised under his guidance and authority. The general policy is to promote understanding and

incentive in the public rather than using force or regulation to gain public co-operation. Training and co-ordination of rat control officers are provided by the Alberta Department of Agriculture, Crop Protection and Pest Control Branch. Meetings and training sessions relative to rat control are organized and conducted by provincial authorities on a regular basis.

2. The interior of the province: Reported rat sightings should be forwarded to the nearest local pest control officer within the province. These can be investigated locally and, when required, the local pest control officer can seek the advice and co-operation of the Crop Protection and Pest Control Branch. Assistance will be provided by the Branch in the identification of specimens as well as advice on procedures for investigating suspected rat sightings. The procedure for investigating and following up reported sightings will be the same as in the area along the Alberta/ Saskatchewan boundary (see below) except that more emphasis should be placed on the source or origin of the rat. For example, if a rat is found on a box car, steps should be taken, with the assistance of provincial authorities, to trace back the origin of the car, determine the stopping points and the possibility of other rats being left at other points within the province. Immediate and reasonable steps should be taken to ensure that the rat or rats be contained and not allowed to migrate or escape before they are exterminated. A list of the rat control officers for each city, town, village and municipality in the province is available through the Crop Protection and Pest Control Branch.

COMPLAINT PROCEDURE

All reported rats in the area are investigated by the appropriate rat control officer and a complete report submitted to the Crop Protection and Pest Control Branch if the sighting is confirmed to be Norway rat. Upon investigation, rat control officers should ensure that the following procedures are followed:

1. identification and confirmation of the species

2. collection of other evidence if a specimen is not available. This would include droppings, diggings, observations for burrowings, holes, hair specimens, etc. Any species or specimens that cannot be readily identified in the field should be sent to:

Zoology Section
Plant Industry Laboratory
O. S. Longman Building
6909 - 116th Street
EDMONTON, Alberta

3. extermination - if rat or rats are present, determine the best extermination method which may include trapping, gassing, the use of poison bait stations and devices.

4. related control measures - this may include the determination of the source of infestation. Disposal grounds, spilled grain and food-stuffs, graineries, elevators, livestock feed storage areas, etc. are possible sources of the infestation. It is important that these parent infestations be traced back, identified and removed as well. In addition, it is important to promote "clean-up campaigns" in an effort to keep farm and building premises clean and unattractive to rats. Public relations and public education including materials, posters, films and other information should be used liberally. Rat control officers are encouraged to promote the rat control program by way of news media and meetings in their respective areas. The provision of advisory services to residents pertaining to rat-proofing buildings, baiting techniques for feed stacks, silos, etc. should be an important part of preventative rat control.

HANDLING LACK OF PUBLIC CO-OPERATION

It is essential that rat control officers and other officials do everything possible to inspire farmers and other members of the public to take immediate and active measures to control rats. The use of regulations by way of notices and court summonses are to be used only as a last resort when all other methods fail.

RESEARCH NEEDS AND FUTURE PLANS

The most effective method of control to date has been the use of packaged and ready-mixed warfarin bait in addition to warfarin water-soluble bait. Research in other areas of the world indicates increased resistance of rats to warfarin and there is need to improve baiting techniques in addition to exploring alternate methods of control should warfarin resistance become a problem in Alberta. At the present time, two to three alternative anti-coagulant baits are being tested and used by rat control authorities; however, more in-depth research on control methods, other than anti-coagulants, is needed.

REPORTS AND PUBLICATIONS

An Act to Provide for the Control of Agricultural Pests and Regulations O/C: Queen's Printer, Edmonton

Control of Mice and Rats: 1970, Canada Dept. of Agriculture, publication #1370.

Keeping Alberta Rat Free: J. B. Gurba - reprinted from Proceedings 5th Annual Meeting, Northwest Mosquito and Vector Control Association, Kamloops, B. C. December 29th, 1965 - available Alberta Dept. of Agriculture

Kill Rats With Warfarin or Pival: Alberta Dept. of Agriculture, Publication #69.

Mice in Buildings: Wisconsin Alumni Research Foundation, Madison, Wisconsin

Norway Rat Control Techniques and Prevention: Mike Smith, Pest Control Officer, M.D. Provost - presented at the annual Animal Pests Seminar, Pigeon Lake, 1973 - available Alberta Dept. of Agriculture.

Rat Control in Alberta: Alberta Dept. of Agriculture, publication #8

Rat Extermination: Saskatchewan Dept. of Agriculture

Rat News Item: Alberta Dept. of Agriculture (Rat Situation reports are available on an annual basis for the past 20 years).

The Rat and Native Wild Rodents often Mistaken for Rats (out of print - mimeographed copies available). Alberta Dept. of Agriculture, Rat Series #2.

Public materials available from Alberta Dept. of Agriculture, Crop Protection and Pest Control Branch:

Posters:
1. "Destroy This Brown Destroyer"
2. "Keep Rats Out of Alberta"
3. "The Only Good Rat is a Dead Rat"
4. "Unwanted Unless Dead"

Mounted specimens, display materials, three films and a slide series are available on a limited basis.

FIELD RODENTS & SMALL MAMMALS

Background

Pocket gophers, ground squirrels[1], field mice[2], and rabbits are the main species of field rodents and small mammals that cause varying amounts of economic damage to horticultural, cereal and forage crops and stored products.

Pocket gophers compete for range forage and cause damage to seeded pasture and hay fields by pushing up large numbers of dirt mounds. Forage yield is reduced and the mounds cause excessive wear on haying machinery and equipment. The gophers also cause damage to roots of trees and shrubs, garden vegetables, insulation on underground wiring and banks of irrigation canals. Ground squirrels cause economic damage to cereal and forage crops. Their burrow openings in pastures are a hazard to livestock and a detriment to field operations. Rabbits and field mice cause most damage in orchards and shelterbelts by "girdling" the trees and shrubs during the winter. Mice may also cause severe damage to swathed crops left over-winter as was the case in 1973-1974. They also destroy stored products in residences, warehouses and other buildings.

Legislation

The following legislation governs the use of toxicants for the control of the above named rodents.

1. Pest Control Products Act - regulates the registration, classification of use and the sale of pest control products.

[1] Richardson's ground squirrel, Columbian ground squirrel.
[2] Meadow mice (voles), white-footed mice (deer mice).

2. Alberta Pharmaceutical Association Act - regulates the sale of various poisons, requiring the signing of a poison register by the purchaser for more toxic compounds and poisons.

3. Agricultural Chemicals Act - regulates the use of all agricultural chemicals including animal poisons. Use of more toxic compounds or those of higher concentration (eg. gopher poisons containing over 2% strychnine) can only be done under permit.

Various publications outline preventive and control techniques including the legitimate use of traps and poisons for some species and situations. At present none of these rodents is named as a pest or nuisance under The Agricultural Pests Act, 1974. The choice of control is left with the individual landowner.

The Pocket Gopher - (Thomomys talpoides), sometimes erroneously called the mole, is found in most areas of the province from the Montana border north to approximately Township 62 and from the Saskatchewan border west to the foothills of the Rockies. Invasion occurring into the area north of Rochester and Newbrook and east of Smoky Lake.

The pocket gopher has a short, stout body, blunt head, exposed chisel teeth, sharp front claws and fur-lined cheek pouches (for carrying food) and is extremely well adapted for digging burrows, pushing up dirt and cutting their food supply from tap-rooted vegetation. An individual gopher may consume up to 4 pounds of fresh vegetation a day and may excavate as much as one ton of earth in a single season.

Control measures include trapping with the Macabee and pantype traps or poisoning with strychnine baits placed either by the hand-probe method or by using a burrow builder machine. At the present time, the Setting of Poison Act, Section 5, permits the use of 8% strychnine bait on oat groats (subject to provisions of the Agricultural Chemicals Act, Regulation 89/70 Section 10 B and C). The use of 0.2% gophacide prepared bait as registered under the Pest Control Products Act is also recommended. The placement of these baits underground eliminated, to a great degree, any hazard to non-target species. Cultural practises and crop rotation are also used as a practical control measure. Natural enemies include coyotes, owls, hawks, weasels, domestic cats and dogs.

More research and development is required and a three year research program has been instituted by A.D.A. through a private consultant to learn more of the habits, geographic location, economic damage sustained and improved methods for control of pocket gophers.

The Columbian Ground Squirrel - (Citellus columbianus) as the name implies, is a ground-living rodent whose range extends from the Montana border north to Grande Cache and from the lower foothills to elevations of 4000-5500 feet. It prefers sloping, sunny meadows, fields and pastures where the vegetation is fairly short, thus allowing easy movement and good visibility. Burrow openings (up to 300/acre) are a hazard to grazing livestock. Considerable damage occurs to range forage and cereal fields where the "red mountain gopher" numbers are high especially in the southern foothills. There is a period of estivation

or "summer sleep" by the adults, starting in July, during which time control measures are ineffective. Natural enemies include the red-tailed hawk, coyote, badger and weasel.

General control methods recommended include shooting, trapping or gassing using cyanide dust and methyl bromide, and poisoning using 8% strychnine treated grain baits as allowed under the Setting of Poison Act, Section 5, and subject to the provisions of the Agricultural Chemicals Act and Regulations. Care must be exercised in the placing of baits. The use of a green vegetable coloring may act as a repellent to seed-eating birds. Special wooden bait boxes have been used to attract the Columbians from an area up to 40 acres, and to make poisoned grain inaccessible to livestock, birds and other animals.

Further research into the history, habits and other methods of control are needed before a solution to the over-all problem of ground squirrel control can be achieved.

111 The Richardson Ground Squirrel - (Citellus richardsonii) is often referred to as the common prairie gopher or flickertail gopher. Its distribution encompasses most of Alberta with the exception of the Peace area north of the Athabasca River. This rodent has become a main economic problem in most agricultural areas. Many factors, including the lack of control by natural predators such as red-tailed hawks, coyotes, badgers and weasels, and the type of agricultural practices used have allowed the population to build up. Besides causing damage to forage and cereal crops, burrow openings of up to 900/acre render the land surface unmanageable and hazardous to livestock and farm machinery.

Much has been learned of the habits of the gopher from research carried out at Rochester, Alberta. Of interest is the fact that adult ground squirrels estivate in the middle of summer. In mid summer and autumn only juvenile gophers are taken in any control program.

General control measures recommended include shooting, trapping and the use of 2% strychnine poisoned grain baits, preferably oats as presently allowed under the Setting of Poison Act, Section 5. In addition, trials using 0.2% gophacide prepared bait have shown good control. Care must be exercised in the placement of these poison baits to safe-guard against poisioning of livestock and non-target species of birds and animals. Small amounts of the poisoned bait should be sprinkled near, but not in, the burrow entrance. The "gopher" cleans out its burrow regularly and the poisoned grain becomes exposed on the mound to birds and animals.

An extensive three year research project carried out near Hanna, Alberta by A.D.A. staff in conjunction with Simon Fraser University using bio-chemical agents (Chemosterilants) showed definite promise of population suppression. However, further research is needed on practical application and alternative methods of control on a larger scale.

IV Field Mice - The meadow vole (Microtus sp.) or field mouse, and the white-footed mouse (Peromyscus sp.) or deer mouse are the two common species that cause damage to young orchards, nurseries, field crops, greenhouse stocks, re-forestation projects and various stored food and feed products. The house mouse (Mus musculus) is more of a nuisance rodent in homes and buildings. Mice pose a health hazard as they may

carry and transmit various diseases of man and animals. Because of their rapid rate of reproduction they provide a food source for many predators including hawks, owls, weasels, coyotes, and domestic dogs and cats. Most damage to horticultural crops occurs when mice girdle the trunks of young trees and shrubs at ground level, eat rootlets and gnaw bark from large roots over winter.

Recommended control measures involve preventive and lethal methods. Trapping, using the common guillotine mouse trap, poisoning, fumigating, rodent-proofing of buildings, removing sources of food and water, thorough cultivation of orchards, and protecting the base of trees and shrubs by wrapping with fine wire mesh or aluminum foil, are some possible methods of control. Rodenticides generally used are the anticoagulants such as Warfarin ready-mixed and water soluble baits, Pival, and Diphacin. Prolin additive increases the effectiveness of anticoagulant baits. In addition strychnine mixed mouse-seed is available commercially.

V The Snowshoe Hare - (Lepus americanus), commonly referred to as the bush rabbit or varying hare, is found in most of the parkland regions of Alberta. Rabbits periodically do severe damage to trees in orchards and shelterbelts and may cause serious losses in nurseries. This damage is done mainly by de-barking the tree trunks and clipping off terminal and lateral shoots on trees when the snow is deep. They may also damage gardens and other cultivated crops. Their numbers vary from year to year and usually follow an approximate 10 year cycle. Major predation is done by lynx, coyotes, owls, and hawks.

Recommended control measures are mainly preventive. These measures include fine mesh fencing small areas of valuable trees, wrapping the trunks and lower limbs of young trees with cloths or burlap, and the use of repellent formulas of Thiram, nicotine sulphate in asphalt, or resins dissolved in denatured alcohol. A commercial repellent, F.M.C. Rodent Repellent, is available for use as a paint or spray in the fall to protect trees and shrubs over winter.

Extensive research has been done by the Rochester Wildlife Research Center and information is available as to population dynamics, habits, etc. Due to great variations in population from year to year, the need for control or damage prevention is not readily predictable.

There is no clearly-defined policy or program at the present time regarding the control of the snowshoe hare. The choice of cereal is left to the individual.

Publications and References

An Easy Way To Control Pocket Gophers	A.D.A. Pub. 686
Control of Pocket Gophers	Univ. of Sask. Pub. 192
Gophacide Field Test Reports 1967-69	A.D.A. Reference
Pocket Gophers and the Gopher Getter	A.D.A. Reference
Pocket Gopher Poison Baits 1963, 1967	A.D.A. Reference
Setting of Poisons Act Chapter 339	
Controlling Rodents in Oregon	Pub. 629
Control of Columbian Ground Squirrels	A.D.A. (1961) Mimeo.
An Improved Method of Poisoning Gophers	A.D.A. (1971) Mimeo.
Applied Research Field Project (Hanna) 1970	A.D.A. Reference
Applied Research Field Project (Hanna) 1971	A.D.A. Reference
The Effects of a Chemosterilant (Hanna) 1971	Abstract S. Fraser Univ.
Richardson Ground Squirrel Population Studies - Rochester Wildlife Res. Center	Progress Rep. 1970/71/72
Control of Rats and Mice	C.D.A. Pub. 1370
Control of Mice, Rabbits and Deer in Orchards	C.D.A. Pub. 1115
Mice and Their Control	A.D.A. Fact Sheet 1974
Control of Mice, Rabbits and Deer in Orchards	C.D.A. Pub. 1115
Heavy Rabbit Damage Expected this Winter	April News Oct. 1973
Demography of Snow Shoe Hare Populations in in Alberta, 1961-1973	Rochester W.R. Center

RABIES VECTORS

Rabies has been known to man for centuries and has been responsible for several thousand human and animal deaths recorded annually. If one investigates the many reports which span almost 100 years of experimental research in rabies epidemiology, it becomes apparent that the relationships between rabies viruses and their hosts are complex and are not clearly understood.

The province of Alberta has experienced sporadic outbreaks of the disease in various domestic and wildlife animals and over the decades has attempted, through a variety of methods, to eliminate or effectively reduce it. The most recent undertaking has been that of the Alberta Central Rabies Control Committee, composed of representatives of provincial and federal departments of health, agriculture and wildlife. Several courses of action have been instituted:

1. Pre-exposure immunization of high risk personnel (veterinarians, pest control officers, technicians, etc.).
2. Pre-exposure immunization of domestic pets.
3. Vector control programs designed to stop the spread of rabies by known wildlife vectors.
4. Supportive research undertaken to monitor infection rates in various species and to increase effectiveness of vector control programs.

A. SKUNK

BACKGROUND

The only species of skunk occurring in Alberta is the striped skunk (Mephitis mephitis), which ranges throughout southern Canada, central United States (with the exception of the arid southwest), and northern Mexico. This animal is the size of a large housecat and has two white stripes running from the base of the cranium to the tip of its large bushy tail. Solid black individuals as well as other color variations are known to occur but only rarely. Being omnivorous in nature, skunks are most often found on the edge of wooded areas close to cultivated fields, sloughs, stream banks and irrigation levies. In rural areas they frequently den beneath or within buildings, rock piles, wood piles, and haystacks, utilizing these to retire to during daylight hours.

HISTORY AND SCOPE OF THE PROBLEM

Skunks are a nuisance to urban land owners because of their habit of burrowing into lawns and golf courses in search of the insects which constitute a significant portion of their diet. Occasional depredations of vegetables and berries can, at times, be attributed to skunks due to their opportunistic feeding habits. Unprotected hen houses or "loose flocks" of barnyard chickens are a favorite target of skunks in search of food, with eggs and young birds being a highly favored food item.

Most people are aware that skunks discharge a nauseous but harmless spray; however, they also carry and transmit a variety of diseases, of which rabies is the most important. The role of skunks as reservoirs of rabies is not completely understood, even though incidents with rabid skunks have been documented since the early settlement of western North America. Skunk rabies first appeared in Alberta in 1971.

REGULATIONS AND POLICY

In response to the threat of rabies in skunks throughout the province, the Crop Protection and Pest Control Branch (Alberta Department of Agriculture) and the Fish and Wildlife Division (Alberta Lands and Forests) have assumed joint responsibility for maintaining an 18 mile wide by 380 mile long skunk depopulation zone adjacent to the Saskatchewan border, with the assistance of landowners and municipal pest control officers. There has been some inter-departmental division of this responsibility for skunk control in that the Department of Agriculture is primarily concerned with agricultural areas, while Alberta Lands and Forests is responsible for urban parks, recreational and public areas. In urban areas, the Fish and Wildlife Division trains police and control officers in the capture and handling of skunks, determines population levels and provides supportive research.

The object of the control program is to artifically reduce vector populations at a rate faster than would the disease, thus lessening contact and transmission within and between species. Fish and Wildlife personnel collect numerous specimens during surveys within the province and these are sent to the Health of Animals Laboratory, Lethbridge, where they are examined for the presence of rabies.

Based on Montana's history of successful application, three mile radial depopulations are undertaken if positive rabid skunks are found within the interior of the province. During these radial depopulations, as well as within the buffer zone, the materials and methods used for the elimination of skunks are:

1. Skunk pellets consisting of beef fat and 0.5 grains of strychnine, and used solely for the elimination of skunks.
2. National, box and Rudolph skunk traps.
3. Shooting.

Present legislation, in the form of a Ministerial Order 11/71 under the Setting of Poisons Act, declares the skunk as a predator but makes it illegal for any unauthorized person to either obtain or set out poison for the destruction of predators. It is possible, however for a resident to kill skunks on his own land, other private land with the consent of the owner, or unoccupied crown land in certain W.M.U.'s (Section 7, General Game

Regulations). As the skunk is classified as a fur bearing animal (Section 2, Wildlife Act), no unauthorized person shall have in captivity or transport living skunks without a permit from the Fish and Wildlife Division. Current policy is to reject requests for permits because of the potential rabies hazard.

COMPLAINT PROCEDURE

Persons suspecting an animal of carrying rabies or with a critical skunk problem are asked to contact the nearest Health of Animals veterinarian, district agriculturist, wildlife officer, or municipal pest control officer for advice and assistance.

Advisory assistance through local officials is available to landowners and citizens regarding general information on rabies, skunk control methods, and techniques pertaining to the handling and reporting of rabid animals.

Further information pertaining to the skunk may be obtained upon inquiry through Fish and Wildlife Division, Alberta Lands and Forests, or Communications Branch, Department of Agriculture.

REPORTS AND PUBLICATIONS

The Control of Rabies Vectors in Alberta: Alberta Department of Agriculture

Rabies - Control of Vector Wildlife Species: Alberta Lands and Forests, and Alberta Department of Agriculture

The Striped Skunk: Alberta Fish and Wildlife Division, Information Bulletin #3

The Biology of the Striped Skunk: University of Illinois Press, Urbana, p. 218.

B. BATS

BACKGROUND

There are eight species of bats known in Alberta, although only the little brown and silver-haired bat are common. The most common bat, the little brown, is primarily a parkland species but is found throughout the province. The big brown bat is similarily distributed although it tends to favor urban areas. Silver-haired bats are found in all forested regions except the northern reaches of the province. Specimens are most often encountered in settled areas during spring and fall migrations.

Bats are important predators of nocturnal insects during the summer months. Most bats migrate, probably leaving the province before winter to hibernate in suitable caves and mines. A few little brown bats are known to hibernate in caves in the Alberta Rockies and big brown bats have been found to hibernate locally in buildings.

Little brown and big brown bats form nursery colonies in attics, walls and other warm, poorly ventilated areas. Colonies are made up of pregnant and nursing females and young. As many as 1,500 little brown bats have been estimated in one Alberta colony, although 50 to 300 are more common; big brown bats usually collect in somewhat smaller numbers. Males and non-producing females are abundant but scattered.

HISTORY AND SCOPE OF PROBLEM

A great many people fear bats and regard them with disgust, thus they are a nuisance when they gain access to homes and offices. Problems associated with colonies, aside from general dislike of bats, are: the offensive and unsightly appearance of dropping accumulations; the noisy activity of bats; and invasions of "bat bugs", red relatives of bed bugs, which inhabit bat roosts.

All common species of bats in Alberta are effective carriers of rabies and infected individuals may be potential transmitters of the disease for some weeks. Because such individuals may come in contact with many bats at nursery colonies or hibernacula, the disease is maintained within the population from year to year.

Normal bats are curious and will occasionally fly at humans or strange objects. Rabid bats infrequently show the symptoms of classical furious rabies and unprovoked attacks on man or animals are uncommon, but very serious. More typically a rabid bat will hang or fly in direct sunlight and be noisy. They are frequently partially paralyzed and found on the ground, where they present a serious danger if picked up by children or animals. Some bats with rabies do not show any observable symptoms of disease, so protective measures should be taken in handling any bat.

Fortunately, bats do not often encounter other species or are unable to bite larger animals so rabies transmission from them is limited. However, it is possible for an animal to contact rabies by eating a rabid bat and aerosol transmission of the disease can occur where bats are concentrated. At the present time, bats remain the major vector of rabies over the greatest part of the province.

REGULATIONS AND POLICY

Bats are wildlife and are protected by the provisions of the Wildlife Act (Reg., 39/72: Definition of Wildlife). An active program of rabies surveillance and biological research is maintained. There is no active program of bat control; however, elimination of colonies harbouring rabies is undertaken where it is felt that human exposure is likely.

COMPLAINT PROCEDURE

Rabies suspect bats should be submitted for testing. Complaints about bats should be directed to the Fish and Wildlife Division. Colonies are of research interest and assistance concerning these complaints can be obtained by contacting Fish and Wildlife research headquarters (O.S. Longman Building) in Edmonton.

REPORTS AND PUBLICATIONS

About Bats: Alberta Department of Agriculture, and Fish and Wildlife Division

Bat: Canadian Wildlife Service, Hinterland Who's Who series

Bats of America: University of Kentucky Press

ALBERTA AGRICULTURE

LIVESTOCK DISASTER INDEMNITY PROGRAM

ELIGIBILITY:

All Alberta farmers making a significant portion of their income from the production of food-producing animals including poultry.

TYPE OF LOSS COVERED:

(a) Losses should fit into a general "Act of God" category where gross negligence on the part of the farmer is not shown to be a factor in the loss. Disease losses should not be covered nor should losses for which adequate insurance is available at reasonable cost. In this regard, failure to have fire insurance on buildings and contents should be considered negligent. Losses due to the activities of man, where civil action is possible, are not to be considered.

(b) Proven predator losses.

EXTENT OF LOSS FOR ELIGIBILITY: (DISASTER)

(a) To be eligible for indemnity the farmer must suffer a significant loss based on animal units on a proportion of his total livestock as follows:

40% in the case of a herd or flock of 5-10 animal units
35% in the case of a herd or flock of 11-15 animal units
30% in the case of a herd or flock of 16-25 animal units
25% in the case of a herd or flock of 26-50 animal units
15% in the case of a herd or flock of 51-100 animal units
10% in the case of herd or flock of more than 100 animal units

No compensation will be paid in the case of a herd or flock of fewer than five animal units.

The number of animal units in the herd or flock is reckoned as follows:

CATTLE	UNIT VALUE
Mature cows, in-calf heifers, mature bulls	1 Unit
Cattle aged 12-23 months inclusive	3/4 Unit
Calves aged 6-11 months inclusive	1/2 Unit
Calves under six months old	1/3 Unit

.../2

SHEEP	UNIT VALUE
Mature ewes and young ones in lamb, mature rams	1 Unit
Lambs aged 6 months to one year	1/2 Unit
Lambs under six months old	1/4 Unit

HOGS	
Boar or sow	1 Unit
Feeders aged 3-6 months	1/2 Unit
Weaners	1/4 Unit

(b) In the case of losses due to attacks by predators, the loss required for entitlement to compensation is One Unit per above or a minimum in value of $100.00.

MAXIMUM INDEMNITY AVAILABLE:

The program should not be considered to cover the full extent of an individual's loss but only to help ease the burden. For this reason, a formula is established based on 80% of the loss with a maximum limit set at $20,000.00. Valuation is to be based on slaughter value or normal market value for commercial breeding purposes at the time of loss.

VERIFICATION OF LOSSES:

These will have to be verified by a practising veterinarian, an agrologist, an official of the Alberta or Canada Departments of Agriculture, or an official of some other Department of Government directly involved.

ADMINISTRATION:

The program is to be administered by Alberta Agriculture under a chairman appointed by the Minister.

DECISION MAKING COMMITTEE:

The committee is formed with following terms of reference:

- to include representatives of Animal Industry and Veterinary Services Divisions, Fish and Wildlife Division, and one or more farmers.
- non-government members should be paid a per diem allowance and expenses.

- funds should come from Horned Cattle Trust used as a revolving fund with money spent for losses being replaced from appropriations annually.
- committee's first responsibility should be to establish suitable formulae for the awarding of indemnity.
- committee should examine each case brought to its attention and make recommendations regarding indemnity.
- any person having a claim or hearing of a claim should contact an appropriate official and complete the correct claim form.
- the Chairman will have the option of calling upon experts from other fields as required.

APPEALS:

Committee decisions may be appealed through the Farmers' Advocate.

G.R.Whenham, D.V.M.
Chairman
Livestock Disaster Indemnity Committee

October 15, 1974

INSTRUCTIONS TO INVESTIGATING OFFICERS ON COMPLETING PREDATOR LOSS CLAIMS

As you are now aware some changes have been made in the indemnity claim forms with the aim of providing better information for the committee. While most of you have had considerable experience in completing these forms perhaps a few words of advice might be in order.

The top half of the form should be completed by the farmer and he should be instructed to read the declaration before he signs it. This part of the form is the farmer's claim and is the only document he needs to complete.

The bottom portion of the form is for the investigating officer to complete and it need not and probably should not be completed in the presence of the claimant. It is the investigating officer's confidential report to the Indemnity Committee. We would like you to be as candid and objective as possible in completing it. Certain items are not of very great importance such as the estimated value of the loss. If the farmer has made some claim as to the value, then you might consider using his figure, but if his figure seems too far out, then please use your own estimate. All committee awards are made on the basis of standard valuations so the committee may ignore the estimated value if it is not considered to be reasonable. The figures of great importance to the committee are the numbers killed that you are able to confirm, but we would like you to give careful consideration to the probable kills. This obviously will be a judgement figure based on your investigation and on your knowledge of the claimant himself. It is a new space on the form which formerly did not exist and we do consider it to be quite important. There have been occasions when an investigating officer has been able to confirm only one or two losses but has expressed the opinion that other losses have occurred. The committee has tended to be generous in such cases.

Your personal comments or recommendations are of great value to the committee as you are the eyes and ears of the committee in the field. We attach great importance to your comments and recommend that you use the back of the form or a separate piece of paper if more space is required.

An attached copy of your complete investigation report is of great value and photographs when available often help the committee in making decisions.

We appreciate your past valued assistance and sincerely trust it will continue in the future.

GRW/rv

G.R.Whenham, D.V.M.
Chairman
Livestock Disaster Indemnity Committee

ALBERTA AGRICULTURE

LIVESTOCK DISASTER INDEMNITY CLAIM (Form 1)

Name of Claimant _____
(please print clearly)

Address _____ Phone No. _____

Municipality _____

Land location of loss: Pt _____ Sec _____ Twp _____ R _____ W _____

Date loss occurred _____ Date reported _____

How reported _____ By whom _____ To whom _____

Number & Species lost _____

Age or size _____ Estimated value _____

Were animals insured? _____

Details of loss _____

_____

I certify that I am a bona fide Alberta farmer making a significant portion of my income from the production of food-producing animals, and that the above information is to the best of my knowledge accurate in all respects. I have not been previously reimbursed for any of the animals lost.

Signature of claimant _____ Date _____

ABOVE TO BE COMPLETED BY CLAIMANT : BELOW TO BE COMPLETED BY INVESTIGATING OFFICER

INVESTIGATING OFFICER'S REPORT

Date report of loss received _____ Date of investigation _____

Number you observed dead _____ Number you observed injured or damaged _____

Estimated age or size _____ Estimated value $_____

Size of enterprise (herd, flock, etc.) _____

Type of management of farm: very good ( ); good ( ); fair ( ); poor ( ).

Nature of disaster _____
(use separate sheet or back of form if necessary)

Was negligence a contributing factor? _____

Your personal recommendation _____

_____

Signature: _____ Date _____

Title: _____ Address & Phone _____

_____

If damage is done by predator, use Form 2.
For proof of loss send photos, if available.
Submit original copy to: Dr. G.R.Whenham, Chairman, Livestock Disaster Indemnity Committee, O.S.Longman Bldg., Box 8070, Edmonton. T6H 4P2
Carbon copy: your files.

ALBERTA AGRICULTURE

PREDATOR LOSS INDEMNITY CLAIM (Form 2)

Name of claimant _____
(please print clearly)

Address _____ Phone No. _____

Municipality _____

Land location of loss: Pt _____ Sec _____ Twp _____ R _____ W _____

Date loss discovered _____ Date reported _____

How reported _____ By whom _____ To whom _____

Species lost _____ Age or size _____

Number lost _____ Cause of loss _____

_____

I certify that I am a bona fide Alberta farmer making a significant portion of my income from the production of food-producing animals, and that the above information is to the best of my knowledge accurate in all respects. I have not been previously reimbursed for any of the animals lost.

Signature of claimant _____ Date _____

ABOVE TO BE COMPLETED BY CLAIMANT : BELOW TO BE COMPLETED BY INVESTIGATING OFFICER

INVESTIGATING OFFICER'S REPORT

Date report of loss received _____ Date of investigation _____

Number of observed kills _____ Number damaged _____

Species killed _____ Estimated age or size _____

Estimated value of loss $_____

Type of management of farm: very good ( ); good ( ); fair ( ); poor ( ).

Number of kills you can confirm _____ Number of probable kills _____

Predator responsible _____ Method of attack _____

Type of management practised (confined, open pasture, etc.) _____

Action taken or recommended to prevent further losses _____

_____

Your personal comments or recommendations _____

_____

Signature: _____ Date: _____

Title: _____ Address & Phone _____

_____

If you have compiled a detailed investigation report for your office or Department please enclose copy to be treated confidentially by this Committee.
For proof of loss send photos, if available.
Submit original copy to: Dr. G.R.Wrenham, Chairman, Livestock Disaster Indemnity Committee, O.S.Longman Bldg., Box 8070, Edmonton. T6H 4P2.
Carbon copy: your files.

ALBERTA HAIL AND CROP INSURANCE ADJUSTERS

ADJUSTING STAFF AS AT OCTOBER 1, 1974

NAME	ADDRESS	CODE	PHONE NO
BACON, Russell	Box 144 Taber	T0K-2G0	223-2193
BAKER, Allen	Box 689 Lloydminster		745-2456
BENDER, William	Gen Del Leduc	T0C-1V0	Unknown
BERESKA, John	Box 1636 Vegreville	T0B-4L0	
BIERAUGLE, Larry	Box 419 High Level	T0H-1Z0	926-2049
BOE, Hans	Box 38 Drumheller	T0J-0Y0	823-5702
BOGDANEK, Steve	Box 10 Eaglesham	T0H-1H0	359-2205
BOHNET, Ernest	214 - 5th St. S.W. Med. Hat	T1A-4G7	526-6652
BOYLE, Luther	Box 260 Grimshaw	T0H-1W0	332-4254
BRUNEAU, Marcel	Box 23 Falher	T0H-1M0	837-2017
CHECKEL, Edward	Box 128 Castor	T0C-0X0	578-2350
CODE, Walter	4926 - 55 St. Red Deer	T4N-2J5	346-2679
CRAIG, Hal	#244 - 5000 Dalhouse Dr.N.W. Calgary		276-7591
DANDREA, Michael	Box 1194 Ft. McLeod	T0L-0Z0	234-3956
DICKSON, Hugh	Box 218 Warner	T0K 2L0	642-2324
DOBISH, John	Box 572 Spirit River	T0H 3G0	864-2189
DODDS, Walter	Box 238 Delia	T0J-0W0	364-2188
DONNELLY, Joe R.	R R #1 Bluffton	T0C 0M0	843-6475
DRYSDALE, John	Box 225 Vegreville	T0B 4L0	632-7139
DUNAENKO, Ernest	Box 628 Bonnyville	T0A 0L0	826-5959
DUNKLE, Lawrence	Castor	T0C 0X0	882-2133
ELFORD, David	1810 - 15 Ave. S. Lethbridge	T1K 0X2	328-4840
EVANS, Jack	Box 711 High Prairie	T0G 1E0	523-2042
FAAS, Otto	Box 762 Didsbury	T0M 0W0	335-3367
FITZSIMMONS, Harold	Box 161 Spirit River	T0H 3G0	864-3635
FORS, Wilfred	10751 - 74 Ave. Edmonton	T6E 1G7	433-7797
GIRARD, Eddy	Box 578 Lac La Biche	T0A 2C0	623-7739
GOOLEY, Walter	Glenevis	T0E 0X0	785-3172
GREENFIELD, Frank	Box 608 Westlock	T0G 2L0	342-2329
HAGEL, Aloys	635 Hunts Cres. N.W. Calgary		274-0864
HAGERTY, Leo	Box 397 Castor	T0C 0X0	882-3180
HARRASEWICH, Metro	Box 55 Eaglesham	T0H 1H0	359-2465
HOLT, Norman	Alliance	T0B 0A0	879-2122
HUNTER, Lyn C.	Irma	T0B 2H0	336-2625
JENSEN, John	Box 1058 Innisfail	T0M 1A0	227-3928
KAHL, Dee	Box 1551 Stettler	T0C 2L0	742-4564
KAPTY, Michael	Box 245 Claresholm	T0L 0T0	235-3796
KASA, Hill	Meeting Creek	T0B 0Z0	877-2289
KAWALILAK, Joe R.	R R 2 Holden	T0B 2C0	688-2333
KAWALILAK, John G.	R R 2 Holden	T0B 2C0	688-2335
KOBBERT, Ernest	Box 444 Hines Creek	T0H 2A0	934-2365
KOBZEY, Danny	Box 730 ATHABASCA	T0G 0B0	675-4818
LAPIERRE, Marcel	Lacorey	T0A 2E0	826-5669
LARSON, Carl L.J.	Dayseland	T0B 1A0	374-2195
LARSON, Herbert	R R 1 Dayeland	T0B 1A0	688-2487
LEDUC, Albert	Box 63 Falher	T0H 1M0	837-2106
LIVERMORE, Ralph	Box 14 Glenevis	T0E 0X0	785-2684
LORENZ, Nick	Box 773 Manning	T0H 2M0	836-2167

LUND, William	Box 25 Sylvan Lake	TOM 1ZO	887-5640
LYPOWY, John	Box 29 Hoinsburg	TOA 1XO	934-2283
MACLAINE, Lawley	Box 1016 Lethbridge		327-9234
MACLEAN, Mickey	Box 16 Sylvan Lake	TOM 1ZO	887-2105
MARCHAND, Ernest	Forestburg	TOB 1NO	582-3860
MARK, Ralph	Box 254, Irma	TOB 2HO	754-3951
MCFADYEN, Donald	Box 301 Rimbey	TOC 2JO	843-2861
McMORRAN, Charles	Bondloss	TOJ OHO	379-2311
MEDD, Walter	Box 63 Tomahawk	TOE 2HO	339-2171
MELNYK, Steve	10802 - 95 St. Grande Prairie	T8V 1Z5	532-8031
MOON, Kenneth	Box 64 Beaverlodge	TOH OCO	354-2472
MULAK, Peter	R R 1 Waskatenau	TOA 3PO	358-2430
NAUNDORF, Rudy	Box 836 Ft. Saskatchewan	T8B 1B0	543-4078
~~NORTS, Leslie~~	~~Box 268 Oyen~~	~~TOJ 2J0~~	~~676-2212~~
ONYSCHUK, John	Radway	TOA 2VO	736-2127
PACHOLEK, Peter	Box 144 St. Paul	TOA 3AO	645-4628
PAHL, Alfred	Hanna	TOJ 1PO	854-3834
PARK, John	R R 2 Site 17 Box 8 Calgary	left Sept 30 Not available until July 75	242-9232
PELECHYTIK, William	Andrew	TOB OCO	365-2339
PETERSON, Cliff	St. Paul	TOA 3AO	643-3712
PETERSON, Robert	2416 - 10 Ave. Lethbridge	T1K OCZ	328-5897
PORTER, Murray	Box 33 Hanna	TOJ 1PO	854-3926
PULLIN, Bruce	Dixonville	TOH 1EO	971-3756
RAINS, Alan	2102 - 18 Ave. S. Lethbridge	T1K 1C6	328-6821
RASMUSON, George	R R 1 Gwynne	TOC 1LO	352-2945
RATCLIFFE, John M	Box 7 Ardmore	TOA OBO	826-3492
REAY, Melvin	R R 2 Red Deer	T4N 5E2	347-0219
REAY, N.D.	R R 3 Red Deer	T4N 5E3	347-0255
REICHERT, Anthony	Provost	T0B 3S0	753-2137
RENKEMA, Luke	Box 44 Fort Assiniboine	TOG 1AO	584-2441
RUSSELL, David	Box 832 Taber	TOK 2GO	223-8210
RUSTAD, Roy	Sub P.O. #1 Lloydminster		875-5650
SCHAEFER, Melvin	R R 1 Sibbald	TOJ 3EO	676-2121
SCHWENDEMAN, Karl	Box 625 Grimshaw	TOH 1WO	332-4494
SEELY, Leroy	Box 392 Brooks	TOJ OJO	362-2574
STEFAN, Wesley	2001 - 10 Ave. S. Lethbridge	T1K OB9	327-6745
TAYLOR, Gordon E.	Halkirk	TOC 1MO	884-2243
TINIVEZ, Yves	Box 2306 Peace River	TOH 2XO	624-8530
TREICHEL, Elwood	Box 442, Falher	TOH 1MO	837-8085
TURNER, Jack	Box 272 Delia	TOJ OWO	665-2457
TWITCHELL, Hubert	Daysland	TOB 1AO	374-2360
WILSON, Charles	New Brigden	TOJ 2GO	664-2383
WRIGHT, Art	Box 193 Mannville	TOB 2WO	763-3834
ZACHER, John	Box 172 Beiseker	TOM OGO	547-3464
ZEMBAL, Stanley	R R 1 Doyle	TOA OMO	525-2204

GOVERNMENT OF THE PROVINCE OF ALBERTA

ALBERTA REGULATIONS 292/68, 253/69, 339/69 AND 184/70

THE GAME ACT

THE WILDLIFE DAMAGE FUND REGULATIONS

(O.C. 1696/68, O.C. 1657/69, O.C. 2243/70 and O.C. 1035/70)

(Filed September 11, 1968, September 10, 1969, November 24, 1969 and May 15, 1970)

The Lieutenant Governor in Council, upon the recommendation of the Honourable the Minister of Lands and Forests, pursuant to clause (*w*) of subsection (1) of section 126 of The Game Act is pleased to establish The Wildlife Damage Fund Regulations as follows:

1. These Regulations may be cited as "The Wildlife Damage Fund Regulations".

2. (1) In these regulations

(a) "adjuster" means an adjuster appointed pursuant to The Alberta Hail Insurance Act;

(b) "Board" means The Alberta Hail Insurance Board;

(c) "crops" means wheat, oats, barley, flax, rye, field peas, buckwheat, rape, grasses, clover, alfalfa, field corn grown for seed or fodder, either standing, in swaths, in sheaves on the ground or in stooks in the field, but does not include crop in stacks, crop on grazing lands, wild crop, or crop already threshed and stored in granaries or in bins;

(d) "damage claim form" means the form supplied by the Board for the purpose of obtaining particulars of the damage caused by wildlife to crops;

(e) "fund" means The Wildlife Damage Fund;

(f) "livestock" means horses, cattle, sheep, goats, swine and domestic fowl;

(g) "Minister" means the Minister of Lands and Forests;

(h) "wildlife" means those animals and birds defined as "big game" and "game birds" by The Game Act.

(2) Terms defined by The Game Act and used in these regulations shall have the meaning given to them by that Act.

3. (1) Any person whose crop is damaged by wildlife may claim compensation for the damage out of the fund by submitting to the agent of the Board nearest his place of residence a completed and signed damage claim form accompanied by an appraisal fee of $25.00 for each section of land or portion thereof on which the damaged crop is situated. All money collected for inspection fees shall become part of the Wildlife Damage Fund.

(2) An appraisal fee shall be paid by the claimant to the agent for every appraisal or reappraisal of his claim conducted by an adjuster at his request.

(3) The damage claim form shall be signed by the claimant or his agent and shall show

(a) the name and address of the claimant,

(b) particulars of the crop in respect of which compensation is claimed, including

(i) the kind of crop,

(ii) the number of acres of each kind of crop, and

(iii) the legal description of the parcel or parcels of land upon which the crop is grown,

(c) the name of the person to whom the compensation is to be paid where damage is established, and if there is more than one person, the share to be paid to each, and

(d) any other particulars the Board may require.

4. (1) All claims for compensation must be properly filed with the Board or any of its agents before May 1st of the year immediately following the year the crop was grown.

(2) A claimant for compensation may not subject the damaged crop to any harvesting operation without the consent of an adjuster until after the adjuster has appraised the damage in question.

5. (1) The Board shall as soon as possible consider every damage claim received and accept or reject the claim for compensation, as the Board in its absolute discretion decides.

(2) No payment of compensation for claims shall be made until after December 31st of the year in which the claim was received.

6. (1) The Board shall provide to the claimant or his agent a copy of every report received from an adjuster concerning the claim.

(2) The decision of the Board concerning the payment of any claim for compensation out of the fund and the amount thereof is final and conclusive.

7. (1) The amount of compensation that may be awarded in respect of any damage claim for a total loss or destruction of any crop shall not exceed $15.00 per acre or an amount equal to one-half of the commercial value of the crop destroyed on each acre of land, whichever is the lesser sum.

(2) Where a crop is damaged but not totally destroyed, the amount of compensation payable to any claimant or claimants shall be determined by multiplying the sum that would be payable for a total loss in accordance with subsection (1) by the percentage of damage the adjuster finds in existence on the land described in the damage claim form.

(3) The Minister shall establish the commercial value of the crop for the purpose of determining the amount of compensation payable pursuant to subsections (1) and (2).

General

8. (1) The Board shall, on the last day of each month in every year, prepare and submit to the Minister a statement of all the claims for compensation and the adjusting costs incurred during the preceding month.

(2) Upon receipt of the statement referred to in subsection (1), the Minister shall make payment out of the fund to the Board the total amount of claims and adjusting costs shown in the statement.

Livestock Losses

9. (1) A person whose livestock is shot by another person on land situated in a wildlife management unit during a declared hunting season for bird game or big game in that wildlife management unit to come within the provisions of these regulations shall, within three days of his knowledge or discovery of the dead or injured livestock,

ALBERTA REGULATION 299/73

(Filed October 17, 1973)

THE WILDLIFE ACT

(O.C. 1601/73)

Approved and Ordered,

GRANT MacEWAN,

Lieutenant Governor. Edmonton, October 16, 1973.

Upon the recommendation of the Honourable the Minister of Lands and Forests, the Lieutenant Governor in Council, pursuant to section 11, clause 7 of The Wildlife Act, makes regulations in accordance with the Appendix attached hereto, being Regulations to Amend the Wildlife Damage Fund Regulations.

PETER LOUGHEED (Chairman).

REGULATIONS TO AMEND THE WILDLIFE DAMAGE FUND REGULATIONS

1. The Wildlife Damage Fund Regulations, being Alberta Regulation 292/68, are hereby amended.

2. Section 7 is amended

(a) as to subsection (1) by adding after the words "any crop" the words "occurring before the 31st day of July, 1973,",

(b) by adding the following subsection after subsection (1):

(1a) The maximum compensation that may be awarded in respect of a damage claim for a total destruction or loss of any crop occurring after the 31st day of July, 1973, shall be the lesser of $25 per acre or an amount equal to 75 per cent of the commercial value of the destroyed or lost crop.

(c) as to subsection (2) by adding after the words "subsection (1)" the words "or (1a)",

(d) as to subsecction (3) by striking out the words "subsections (1) and (2)" and by substituting the words "this section".

(Extract from *The Alberta Gazette*, October 31, 1973)

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Province of Alberta, Edmonton

GOVERNMENT OF THE PROVINCE OF ALBERTA

ALBERTA REGULATION 86/74

(Filed March 27, 1974)

THE WILDLIFE ACT

(O.C. 634/74)

Approved and Ordered,

GRANT MacEWAN,

Lieutenant Governor. Edmonton, March 26, 1974.

Upon the recommendation of the Honourable the Minister of Lands and Forests, the Lieutenant Governor in Council, pursuant to section 11, clause 7 of The Wildlife Act, makes regulations in accordance with the Appendix attached hereto, being Regulations to Amend The Wildlife Damage Fund Regulations.

HUGH M. HORNER (Acting Chairman)

REGULATIONS TO AMEND THE WILDLIFE DAMAGE FUND REGULATIONS

1. The Wildlife Damage Fund Regulations, being Alberta Regulation 292/68, are hereby amended.

2. Subsection (1) of section 4 is amended by striking out "1st" in the second line and by substituting "16th".

(Extract from *The Alberta Gazette*, April 15, 1974)

Printed by L. S. WALL, Queen's Printer for the Province of Alberta, EDMONTON

(a) report the death of or injury to the livestock to the nearest Detachment of the Royal Canadian Mounted Police,

(b) complete an application, on forms supplied by the Minister, for payment of compensation from the fund for the dead or injured livestock, and

(c) provide a copy of the completed application form to the Royal Canadian Mounted Police Detachment to which the report of the death or injury was made immediately upon completion of the application.

(2) The application referred to in clause (b) shall be forwarded to the Director of Fish and Wildlife, Natural Resources Building, Edmonton, Alberta, and shall be accompanied by

(a) a statutory declaration completed by the claimant showing

(i) the full name, address and occupation of the claimant,

(ii) the date, place and legal description of the land where the dead or injured livestock was discovered,

(iii) the value of the dead or injured livestock at the time it was killed or injured and its salvage value, if any,

(iv) the amount of compensation claimed,

(v) the name and address of the person who killed or injured the livestock, if known to the claimant,

(vi) the action taken to recover compensation from the person who killed or injured the livestock or if no action has been taken, the reasons for not taking it,

(vii) that the amount of compensation claimed is fair and reasonable,

(viii) the location of the injury on the appropriate diagram provided on the application,

(ix) the date of knowledge or discovery of the loss being claimed,

(x) where applicable the name and address of the person reporting loss or injury to claimant,

(b) the name and address of two local ratepayers who examined the dead or injured livestock for which compensation is claimed.

(3) A report of the investigation conducted by the Royal Canadian Mounted Police concerning the death of or injury to the livestock shall be made available through the Attorney General's Department to the Minister."

10. (1) The Minister shall consider every claim for compensation for dead or injured livestock and shall advise the claimant whether the claim is accepted or rejected.

(2) In all matters concerning a claim for compensation for dead or injured livestock the decision of the Minister is final and conclusive.

(3) Section 5, subsection (2), shall apply to all livestock compensation.

11. (1) The amount of compensation that may be paid to any claimant in respect of any dead or injured livestock shall not exceed eighty per cent of the average current market price of the species killed or injured, as determined by the Minister.

(2) In determining the amount of compensation, the Minister may consider with the current market prices any other factors which, in the Minister's opinion, may affect the value of the dead or injured livestock.

(3) In no case shall the amount of compensation paid exceed the following maximums:

(a) For a head of cattle	$ 500.00
(b) for a goat	$ 50.00
(c) for a horse	$ 400.00
(d) For a sheep	$ 75.00
(e) for a swine	$ 75.00

12. (1) The Royal Canadian Mounted Police may engage the services of a qualified veterinarian to examine the dead or injured animal.

(2) When an inspection is made by a veterinarian pursuant to subsection (1), the Minister may authorize a reasonable remuneration for veterinary services from the fund not exceeding $25.00 for veterinary inspection and 10c a mile for transportation.

Rescission

13. The Wildlife Damage Fund Regulations established under Order in Council No. 1446/66 and filed as Alberta Regulation 268/66 are hereby rescinded.

(Extract from The Alberta Gazette, September 30, 1968, September 30, 1969, December 15, 1969 and June 15, 1970)

Printed by L. S. WALL, Printer to the Queen's Most Excellent Majesty,
Edmonton, Alberta, 1971